University of Alberta

COLLABORATIVE MANAGEMENT IN EL CIELO BIOSPHERE RESERVE, TAMAULIPAS, MEXICO

by

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment to the requirements for the degree of Master of Arts.

in

Recreation and Leisure Studies

Faculty of Physical Education and Recreation

Edmonton, Alberta
Fall 2007

Library and Archives Canada

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395 Wellington Street
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Direction du Patrimoine de l'édition

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence
ISBN: 978-0-494-33110-1
Our file Notre référence
ISBN: 978-0-494-33110-1

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ABSTRACT

The purpose of this qualitative study was to explore and describe the communication and decision-making processes that existed in El Cielo biosphere reserve as well to identify components of collaborative management. Several qualitative strategies were used for this research. A total of thirty semi-standardized interviews, twelve informal conversations and observations during a thirty-five day period provided data that allowed the description of five formal and seven Informal processes. These varied depending on their level of formality, which was influenced by the nature of the relationship among the participants, their social roles, and the channels used for communication. Gray's model of collaboration styles was used in order to identify collaboration within the different processes found in the protected area. Results demonstrated that the use of informal networks allowed local stakeholders to collaborate through joint ventures. However, collaboration with non-local stakeholders showed the need of research and practical solutions in order to build in this latent potential.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION *1*

CHAPTER 2: EL CIELO BIOSPHERE RESERVE *5*

Introduction **5**

Research in El Cielo Biosphere Reserve **5**

Description of the Area **6**

Ecotourism Corridor in El Cielo Biosphere Reserve **8**

Alta Cima 9
San Jose 11
La Gloria 13
Joya de Manantiales 14

Description of Stakeholders **15**

Local Communities 16
Organized Groups and Local Associations 21
Government 23
NGOs 26
Visitors 27

Description of Current Management **27**

CHAPTER 3: REVIEW OF THE LITERATURE *30*

Introduction **30**

Protected Areas **30**

Biosphere Reserves **32**

Biosphere Reserves in Mexico **33**

Tourism and Sustainable Development **35**

Ecotourism **39**

Collaborative Management **42**

Conclusion **46**

CHAPTER 4: METHODOLOGY *48*

Introduction **48**

Research design **48**

Research Themes 49
Sample and Data Collection 50
Consent 58
Research Instruments 58
Data Analysis 66

Limitations **67**

Conclusion **68**

CHAPTER 5: RESULTS AND DISCUSSION *69*

Formal Communication Process and Decision Making **69**
Among Community Members 70
Between Government Agencies and Communities 73
Between NGOs and Communities 76

Informal Communication Networks **77**
Among Community Members 77

Discussion of Gray's Model **83**
Appreciative Planning 85
Collective Strategies 87
Dialogues 89
Negotiated Settlements 90

Chapter 6: Conclusions *91*

Limitations of the Research **93**

Benefits of the Research **94**

Recommendations for Future Research **94**

Recommended Questions for Future Research **95**

Conclusion **95**

APPENDIX I: LETTER OF CONSENT *96*

APPENDIX II: RESEARCH PERMITION LETTER FROM SOPDUE *97*

APPENDIX III: LETTER OF INFORMATION *98*

APPENDIX IV: LETTER OF INFORMATION (SPANISH) *100*

APPENDIX V: INTERVIEW GUIDE FOR THE LOCAL RESIDENTS *102*

APPENDIX VI: INTERVIEW GUIDE FOR THE ORGANIZED GROUPS LEADERS *104*

APPENDIX VII: INTERVIEW GUIDE FOR THE COMISARIADOS EJIDALES *107*

APPENDIX VIII: INTERVIEW GUIDE FOR THE MUNICIPAL PRESIDENTS *110*

APPENDIX IX: CONSENT TEMPLATE *112*

APPENDIX X: CONSENT TEMPLATE (SPANISH) *113*

REFERENCE LIST *114*

LIST OF TABLES

4.1 Themes and sub-themes used for the design of qualitative methods 49

4.2 Categorization of research participants 52

4.3 Number of participants under sample categories 57

LIST OF FIGURES

2.1 Location of El Cielo biosphere reserve in the state of Tamaulipas.....8

2.2 Map of the ecotourism corridor of El Cielo biosphere reserve 9

2.3 Local communities 23

2.4 Government agencies 25

2.5 NGOs 27

5.1 Formal processes in El Cielo 70

5.2 Informal processes in El Cielo 78

5.3 Identified designs of collaboration 84

CHAPTER 1: INTRODUCTION

Protected areas are dedicated to the conservation and maintenance of biodiversity as well as cultural resources. The International Union for the Conservation of Nature and Natural Resources (IUCN) recognizes six categories of protected areas and follow goals from strict preservation to different levels of human use and associated alteration of the natural environment (Swinnerton, 1999). Mainly, the biosphere reserve moves toward a sustainable balance between biodiversity conservation, human development and maintaining cultural values (UNESCO, 2002).

After the fourth World Congress on National Parks and Protected Areas in Caracas in 1992, the IUCN stated that protected areas were a strategic means for sustainable development, interaction of people and nature, and economic benefits for local communities (Swinnerton, 1999). A well-planned tourism in protected areas might become a substitute for logging, hunting and other economic activities that endanger biodiversity. A good tourism management can help managers reach biodiversity goals while local communities strive for sustainability.

Ecotourism can be considered a path for local communities to reach a sustainable development. Sustainable tourism required a management that recognized the participation of local communities in order to meet their economic, social and cultural needs (Campbell, 1999).

Collaborative management involved stakeholders in joint decision-making processes where power and responsibility were shared (Selin & Chavez, 1995).

Furthermore collaboration provided local communities with empowerment and the ability to manage resources in a manner that meets their needs (Guevara, 1996).

Benefits from collaborative management included the ability of stakeholders to improve communication, learning through information exchange, and co-sharing between agencies. Respect for stakeholders and stewardship are also important benefits from this approach. Collaborative management provided local communities with a voice in decision-making, as well as political and cultural empowerment. Local communities obtained direct economic benefits by local hiring and research work. Finally, once stakeholders have worked in a collaborative approach, they increased their cultural understanding (Selin & Chavez, 1995; Selin, Schuett, & Carr, 2000; Weitzner & Manseau, 2001).

Collaboration also brought challenges to the individuals, groups or organizations involved. Partnership can be difficult at the beginning. Differences in perspectives, authority, and power may inhibit working as a team. Conflict can emerge if participants do not share the same understanding of the definition and purpose of a protected area. Resources such as time and money can create barriers. Good communication was essential to avoid problems and clarify roles and responsibilities. Because different levels of authority might be involved in collaborative processes, equity must be ensured. Local communities must also value a collaborative approach, since their participation was crucial for a management development (Weitzner & Manseau, 2001).

Two different types of costs were associated with collaborative management (Selin, 1998): costs to the individuals/organizations and costs to the community or state. According to Selin (1998), costs for the individual/organizations included high transaction costs and deflated expectations. High transaction costs were the necessary investments of time and human resources needed mainly in the first stages of the collaborative process. Deflated expectations related to the effect of failed promises of a more equitable distribution of benefits; participants may have become involved in a collaborative process because of the benefits promised which may not materialize. Costs to the community/state included opposition from vested groups and manipulation to serve special interests. Opposition from these participants constrained efforts for collaborative processes. Manipulation to serve special interests related to large groups who may veto minorities over important decisions.

Factors addressed in literature that supported success must include high level of civic engagement, broad public interest, strong leadership, as well as legal and organizational support (Selin, Schuett, & Carr, 2000). Constraints related to collaboration included power vested in elite organizations, lack of incentives to participate, historical and ideological barriers, difference in perceptions and complexities of technical issues such as objectives of a protected area, or the concept of ecotourism (Gray, 1989; Selin, 2000).

El Cielo biosphere reserve in Tamaulipas, Mexico is a protected area where ecotourism has become the second major economic activity. The development of this activity in the area is not primarily grounded in collaborative

approach. Level of local participation in management and decision-making is still low and lack of stewardship allows conflict between stakeholders. Some non-governmental organizations (NGOs) have worked in collaboration with few of the local communities for the development of ecotourism (S. Manzanares, personal communication, March 11, 2005; J. Olarte, personal communication, February 25, 2005).

The research objectives were: 1) to identify potential stakeholders of the "ecotourism corridor" of El Cielo biosphere reserve and their participation in management processes of the area; and 2) to describe the communication and decision-making processes. Chapter two described El Cielo biosphere reserve. It contained a brief physical description, a history of the declaration, and a description of the ecotourism corridor. This chapter also described the different stakeholders of El Cielo biosphere reserve and the current management practices. Chapter three reviewed the literature about protected areas and collaborative management. Chapter four presented the methodology. Chapter five presented the data about the different communication and decision-making processes that occurred among the stakeholders of El Cielo, followed by the analysis of results according to Gray's (1989) chart of designs of collaboration. Finally, chapter six included the conclusion of my results and the benefits of this research.

CHAPTER 2: EL CIELO BIOSPHERE RESERVE

Introduction

This chapter includes the reasoning behind why this research took place in El Cielo and how my social location influenced my research in this protected area. It also includes an illustration of the area, stakeholders, and current management. The description of the area contains physical, geographical and historical elements.

Research in El Cielo Biosphere Reserve

I decided to develop my research in El Cielo biosphere reserve because this is an area I was acquainted with and because I could potentially return to expand my research and develop community projects that would benefit the rural communities. I believe that being a young female from the middle social class and who has a postgraduate level of education had a great influence in my entry into the field because the rural communities of El Cielo are familiar with older male researchers who visit the area. Also, because most of the formal processes are gender specific and this restricted my access to community meetings and witnessing some decision-making processes. However, being a postgraduate student helped me in having access to some government agencies and to speak with the directors of the government organizations. Scheduling meeting with government directors is usually a hard and long process.

Description of the Area

El Cielo biosphere reserve is a cloud forest situated southwest of Tamaulipas, Mexico. The core area of the biosphere reserve is 144,530 hectares. The buffer zone, El Cielo, hosts four distinct ecosystems: low tropical jungle, mountain tropical forest, pine oak forest, and arid vegetation zones. The temperature ranges from 11° to 30° Celsius, and its elevations range from 198 to 2,286 meters above sea level. There are 524 plant species, including approximately 60 different orchid species. It hosts 93 mammalian, 25 amphibious and 60 reptilian species. Endangered species include the *panthera onca*, *ursus americanus*, and *phasianus*. Most importantly, there are 430 bird species in this natural area (255 resident and 175 migratory population) (Gobierno de Tamaulipas, 1996).

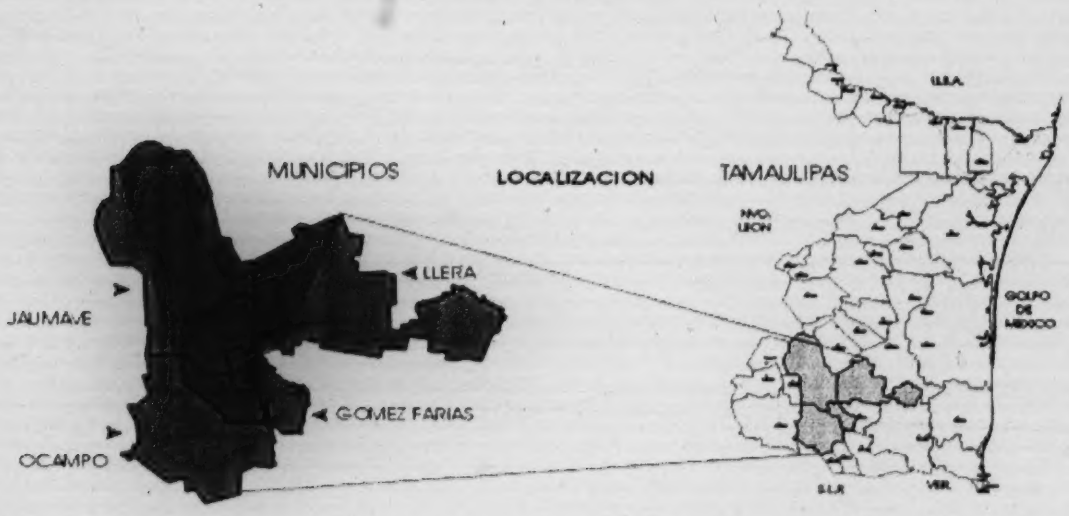
In 1930, before designation as a biosphere reserve, this part of the Sierra hosted a sawmill company and its associated development (Vrins, 2003). People from the states of Michoacan, Hidalgo, and San Luis Potosi were the majority of settlers, with Tamaulipas as a minority (M. Contreras, personal communication, August 20, 2004). The Second World War increased the demand for timber, and consequently other sawmill and lumber companies emerged. Within a 30-year period, the area became highly urbanized. The *ejido* of San Jose had a hotel, a movie theatre, and a gas station, which are almost invisible today. After 1960, topography and conflicts of access made timber harvesting less efficient and companies slowly retreated from the area (Vrins, 2003).

Scientists and researchers from Texas visited el Rancho del Cielo to observe the great variety of bird species that stop during their migration to the south. Rancho del Cielo is a research centre established in 1938 by Canadian Frank Harrison on land he bought to build a house (Vrins, 2003; Webster and Webster, 2001). The research centre now lies within core areas of the biosphere reserve. As El Cielo became more popular for bird watching and research, concerns about restoration and conservation increased among researchers. Working with the State of Tamaulipas, they advocated for a biosphere reserve designation (J. Olarte, personal communication, August 14, 2004). In 1985, the area was declared by the state government and recognized by the IUCN as a biosphere reserve (Tamaulipas, 1996). El Cielo is the only biosphere reserve in Mexico managed by a state government. In 2001 the federal government recognized El Cielo as a federal protected area.

El Cielo's territory is divided into *ejidos*, private, state and federal land. About 79 percent of its land is comprised by the four *ejidos*: Gomez Farias, Jaumave, Ocampo and Llera. According to section VII of article 27 of the Mexican Constitution and articles 9 and 10 of the Agricultural Law of Mexico, *ejidos* are legally recognized entities owned by the *ejidatarios* (community people) Jurisdiction is internal and controlled by the *asamblea* (ejido's assembly).

Eighteen percent of the land is held privately, including Rancho El Cielo, and land owned by the State of Tamaulipas' government. Federal land comprises three percent of the territory and is managed by the *Secretaría de Medio Ambiente y Recursos Naturales* (SEMARNAT) (Lewitsky, 2002).

Figure 2.1 Location of El Cielo biosphere reserve in the state of Tamaulipas



Ecotourism Corridor in El Cielo Biosphere Reserve

Within this protected area exists an ecotourism corridor located in the municipality of Gomez Farias. After the closing of the sawmill factory, this corridor informally became the route for tourists to the protected area. Local tourism marketing targets this corridor for the development of tourism with various sustainable tourism projects developed in these communities. This corridor includes four rural communities: Alta Cima, San Jose, La Gloria, and Joya de Manantiales. Both a physical route and an economic strategy connect these four communities. The descriptions of the *ejidos* follow the order of their geographic locations in El Cielo biosphere reserve. These descriptions are based upon my observations and information provided by SOPDUE (2004).

Figure 2.2 Map of the ecotourism corridor of El Cielo biosphere reserve. Modified from a tourism flier provided by Hotel Posada Campestre (2005)

Alta Cima

Alta Cima is the first and largest of the four *ejidos*. Four-by-four vehicles are needed to visit El Cielo, but to get to Alta Cima, a regular car or truck should suffice. Most of the tourists who wish to hike leave their cars in Alta Cima and make their journey on foot. Thirteen families live in the community, with approximately 131 inhabitants (SOPDUE, 2004). On average, houses in all the rural communities are wooden. The houses are spread out and not easily seen as tourists pass through the area. Alta Cima also has several concrete buildings painted in bright colors. These concrete buildings make Alta Cima look more developed than the surrounding communities. These include the hotel El Pino, which belongs to the male group *El Pino*, a small eco-store and restaurant which

belongs to *La Fe*, a second hotel owned by one of the community members, and a few business (i.e., small convenience stores). There are three organized groups in the community: (1) *La Fe*, a women's group that operates a small restaurant and makes souvenirs and organic products (i.e., homemade wine and marmalades) sold at the eco-store; (2) *El Pino*, a men's group that maintains and runs a small hotel; and (3) the *Grupo de Guias de Aves* (bird watching guides) that includes members from the other communities as well as Alta Cima. These guides have had training on the different bird species found in the area, environmental education, environmental interpretation, and tourist services. Training was provided by *Pro Natura.*

Because of its easy access, Alta Cima is the venue for most of the meetings and workshops presented by *Pro Natura* and government agencies. *Pro Natura* has been instrumental in providing language training to serve international tourists. They have also given workshops such as accounting and business management to the community members. Through conversations with participants and an English language teacher, I discovered that no other community has these benefits. Promoters of development projects find it easy to meet in Alta Cima. Transportation between Alta Cima and the other communities requires a four-by-four vehicle. Without a vehicle, the trip is a two- to four-hour walk, at the cost of a full day's salary. Community members do not find travel to Alta Cima an easy option, thus several groups organized through the *Organizate* program have stopped coming to Alta Cima (personal communication, M. Garza, August 13, 2004).

The major tourist concerns of Alta Cima are: tourists not staying overnight, spending small amounts of money in the community, and littering. *Fleteros*[1] make a quick stop in Alta Cima for a washroom break and shopping at the eco-store of *La Fe*. Hikers also stop for water breaks or to have lunch. Tourists who spend the night in Alta Cima are usually bird watchers using the services of the *Grupo de Guias de Aves*.

The people from Alta Cima have initiated two strategies to address these issues. Organized groups from Alta Cima have coordinated with other communities and *Pro Natura* to create packages and announce them in a web page; the hope is to bring more tourism to the area and hence increase tourism profits. Second, Alta Cima residents decided to charge a toll of twenty pesos ($2.26 CA) for all tourist vehicles passing through the community. The toll is collected in a wooden booth located at the entrance of the community, and the people who work in the booth are assigned by the *comisariado ejidal*. One of the participants explained that the revenue from the toll is used to pay for maintenance to the community road and cleaning the community's open areas.

San Jose

The second community is San Jose and takes about an hour in a four-by-four vehicle or a two-hour hike from Alta Cima. As the second largest *ejido*, it has a population of approximately fifty-eight members in thirteen families (SOPDUE, 2004). Houses are located quite close to one another, which make the community

[1] *Fleteros* are the people that own or drive a four-by-four truck and provide transportation service to the tourists.

look crowded. Bright colors are only found in the Coke signs on the three small convenience stores. San Jose is located in the middle of the ecotourism corridor and is an easy venue for overnight stops and hikes to other communities. Some people allow camping on their land and provide food service from their kitchens; others rent animals for transportation. Four groups of cabins provide the necessary services for tourism. Each cabin group is privately managed by members of the community. There are two small restaurants: one is managed by a woman, and the other, *El Oso*, is managed by the only organized group in San Jose (*Grupo de Trabajo San Jose*). The *Grupo de Trabajo San Jose* was created through the *Organizate* program from *Terra Nostra*. This group also provides accommodation next to the restaurant. The *comisariado ejidal* from this community (M. Sanchez, personal communication, February 22, 2005) mentioned that they are working with CONAFOR to build cabins and rent outdoor equipment such as mountain bikes for tourists.

The community of San Jose also charges a toll. It is approximately five times higher than Alta Cima's toll. The revenue goes to the community's common budget and partially funds road maintenance (F. Rodriguez, personal communication, February 19, 2005). The establishment of the toll created a conflict with the *fleteros*, because both tolls are paid by the *fleteros,* who must subtract it from their profits. One of the *fleteros* said that transportation fees cannot be raised because tourists complain about the high cost.

La Gloria

The *ejido* La Gloria is the second smallest community, with 35 people (SOPDUE, 2004). It is about a 90-minute walk or 30 minutes in a four-by-four from San Jose. Only ten families reside in this location, and the remaining twenty-five live primarily in the State of Guanajuato. There are six wooden houses and one small convenience store. This community has three cabins that provide accommodation for tourists. Members also lead tours on an interpretative trail and rent donkeys and horses as transportation. Even though there is no restaurant, tourists may ask the women to cook for them.

Most of the people who live in the community are waiting for their official land titles. They call themselves *posesionarios* (i.e., in possession of land) but do not yet have the rights of an *ejidatario*. *Posesionarios* do not have a voice in formal official decision-making processes of the *ejido*. They are involved because they live there; however, they cannot make decisions about the use of land. The *posesionarios* have no representative before the legal system. A *posesionario* said that *ejidatarios* living in the State of Guanajuato hold their meetings outside of the community and do not consult them before making decisions. The present *comisariado ejidal* from La Gloria belongs to the group of people who live in Guanajuato.

When *Organizate* started, a few residents of La Gloria attended. One of them promoted the creation of a group – *Unidos Venceremos*. Through organization, the *posesionarios* can obtain support from the government and NGOs. *Unidos Venceremos* is comprised of ten residents and has developed two

projects. One is an interpretative trail. Tour profits go to the guides. The second was the cabins built with financial support from *Pro Natura*. The cabins are managed by *Unidos Venceremos* and the profit is equally divided among the members. Some members of this group have participated in workshops about environmental interpretation, tourism services and first aid training. As an organized group, they hold meetings and deal with community issues when the *comisariado ejidal* is not present. The group follows a consensus decision-making process and meets regularly.

Joya de Manantiales

Joya de Manantiales, the last community in the ecotourism corridor, is a two-hour drive or a three-and-a-half-hour hike from San Jose. Joya de Manantiales is located within Core Area II of the biosphere reserve and is comprised of about ten families who are all related. The main attractions are waterfalls and caves. As the last community, fewer tourists come and rarely stay overnight. Usually, the *fleteros* take the tourists to Joya de Manantiales for the afternoon and then back to San Jose; therefore, Joya de Manantiales receives less of the tourists' dollars. However, fewer visitors allow Joya de Manantiales to maintain a peaceful community and suffer little environmental damage.

All buildings in this community are made of wood. These include a small convenience store, community church, and a cabin with two rooms that serves as accommodations for tourists and are owned by one of the community members. Food service is provided by most of the women of the community who work in

their own houses. A small cabin, which will serve as a tourism information booth, is being built. In this cabin, the community will work in shifts to provide information to tourists about the attractions and the prices of the tours. CONAFOR will provide financial and resource assistance for the construction of a second group of cabins. These cabins will be used for accommodation and will be managed by the community. The profit will be divided among the *ejidatarios*. The location of Joya de Manantiales has its benefits and costs.

No formal organized groups exist and residents said no one attended the *Pro Natura* workshops and training. Traveling to Alta Cima is expensive and entails the loss of a day's income. Some of them have attended *Pro Biosfera* workshops in San Jose and Manantiales about safety, fire hazards, carpentry, tourism, and rappelling. Since the community is small and interrelated, the members developed strategies to obtain and distribute the benefits of tourism. For example, they have adopted a rotating role for the cooks and guides of the community so that financial benefits are fairly distributed.

Decision-making in Joya de Manantiales is done by consensus. The community decided to have meetings every two months, because several of the *ejidatarios* live outside El Cielo biosphere reserve (A. Barriga, personal communication, February 15, 2005).

Description of Stakeholders

Some of the stakeholders of El Cielo are individuals, groups, and organizations affected by any decisions, use of the resources, or the benefits of

goods and services (Geoghegan & Renard, 2002; Gray, 1989). Identifying key stakeholders and their issues of concern are vital first steps toward collaborative management (Daniels & Walker, 2001; Guevara, 1996; Nianyong, 2001). In the case of El Cielo biosphere reserve, local communities are diverse and contain various stakeholders with varying levels of power and authority. Community members, government agencies, NGOs, and visitors are the stakeholders.

Local Communities

El Cielo biosphere reserve was established in an area mostly owned by *ejidos*. Logging in the sub-tropical forest was the main economic activity of the rural communities before El Cielo was designated as a biosphere reserve. Upon this designation, the residents of El Cielo have survived by harvesting *palmilla*, subsistence agriculture, and low-scale cattle ranching (Lewitsky, 2002; Walker, 1997). The harvesting of *palmilla* constitutes their highest source of income. The collection of *palmilla* is restricted only to the *ejidatarios* or individuals designated by them to take over their interests (M. Contreras, personal communication, August 20, 2004). The *Secretaría de Obras Publicas, Desarrollo Urbano y Ecología* (SOPDUE – Secretariat of Public Works, Urban Development, and Ecology) and the *Comision Nacional Forestal* (CONAFOR – National Forest Commission) extended a permit to the *ejidatarios* for harvesting. Research has proven this activity to be ecological sustainable because *palmilla* grows twice a year and does not represent an endangered species (M. Hernandez, personal communication, July 09, 2004).

The *palmilla* is sold by *gruesas* (a bunch of 50 pieces) to some providers from cities near El Cielo. For each *gruesa*, the *ejidatarios* receive about $10 Mexican pesos (app. $1.04 CA). Each individual collects approximately eight to ten bags of fifty pieces a day in the high season which represents a daily income of about $80 to $100 Mexican pesos (app. $8.3 to $10.37 CA) (F. Hinojosa, personal communication, July 09, 2004). The *palmilla* is sold by the providers to flower shops for arrangements and exported to the United States.

Following the biosphere reserve objectives, agriculture is allowed only as a self-consumption activity and lands for agriculture are restricted to small parcels (Vrins, 2003). Corn is the most common crop in the area. It has caused conflict in the past because bears like to eat the corn and individuals shoot at them (M. Contreras, personal communication, August 20, 2004). Fruits and vegetables such as guavas, pears, apples, berries, mandarins, *nopales*, bananas, avocados, tomatoes, and oranges are also grown in the area (Vrins, 2003). Some of them are processed into jams and homemade wine for the tourists (Medellin, 1997a).

Tourism became an important source of income for the local communities as they became providers of services such as accommodation, food, tours and local products (Lewitsky, 2002; Medellin, 1997b). At first, people refused to develop tourism. For local residents tourism meant trouble, damage of their natural resources, and few benefits. For some residents, engaging in tourism services started in 1993 when a representative of the NGO *Terra Nostra* talked to them about tourism as a sustainable opportunity. Through workshops he taught them how to run businesses and trained them to develop tourist projects (E.

Jimenez, personal communication, August 16, 2004). Through NGOs and government agencies, local communities have developed their knowledge about environmental education and tourist services (E. Jimenez, personal communication, August 16, 2004). Services provided by local residents in all *ejidos* include accommodation, food services and tour guiding. Some *ejidos* have more specialized services such as local souvenir stores, rustic hotels, small restaurants, specialized tour guides, and transportation to one of the biosphere reserves.

Community Members

Residents of the local communities are divided into three different types of designations, *ejidatarios*, *avecindados*, and *posesionarios*.

Ejidatarios. According to the *Ley Agraria* (Agrarian Law of Mexico), *ejidatarios* are all adult men and women who hold a land title. *Ejidatarios* have the right to participate in the decision-making over the *ejido*'s land and the associated activities. Each *ejido* has its own governance and regulations. The highest authority in the *ejido* is the *asamblea*, which is comprised of all the *ejidatarios*. The main tasks of the *asamblea* are to promulgate regulations, to discuss land and authority issues, and to distribute the profit from community enterprises. According to the law, the *asamblea* must meet at least once very six months; the average time gap between meetings is two months (M. Contreras, personal communication, August 20, 2004). According to article 21 of the *Ley Agraria*, decisions are taken on a half-plus-one basis. The second level of authority is the

comité ejidal (community's committee), which is comprised by a *comisariado*, a secretary, and a treasurer. Article 32 of the *Ley Agraria* requires the *comité ejidal* to be chosen by the *ejidatarios* and to serve as their legal representatives before the municipal authorities.

Decision-making in an *ejido* is based on one vote per family, usually the man (Ley Agraria de Mexico, 2005; M. Chavez, personal communication, March 25, 2005). Mr. Chavez, a member from Alta Cima, said that

> *"Los hombres son los beneficiados del ejido, osea son los ejidatarios. Si va una mujer pero por que su marido se murió y le dejó la carta a ella pasándole sus beneficios."* The men are the favoured in the *ejido*, they are the *ejidatarios*. A woman attends the meetings only if her husband has died and left a letter that passes on the benefits to her. [2]

If a man dies he can pass the title to his wife or sons to ensure that the title remains in the *ejido*. The title rarely passes to daughters, because they are expected to get married and may move to a different community. Most of the women who do not participate in the decision-making processes are aware of the issues and decisions because their husbands or neighbours inform them. A woman from the community of Alta Cima said she believes women are still indirect participants in the decision-making of the community. They sometimes discuss the topics raised at the meeting at home, with friends or with neighbors. By doing

[2] Translated by Karla Barron.

this, some women feel they provide input into the decision-making process. Women may also have an indirect influence through organized groups. An organized group of women may have sufficient importance to approach the *comisariado ejidal* or a group leader and discuss issues that concern them.

City Ejidatarios. The closing of the sawmill factory and the declaration of the protected area caused people to move to nearby cities or states in search of jobs. These *ejidatarios* no longer live in the rural communities and only visit their land on holidays or to attend community meetings. Because they retain the "*ejidatario* title" they have the right and obligation to participate in the decision-making processes. These *ejidatarios* often miss emergency meetings (i.e., when an organization or government agency requires approval of a project or a conflict with another community emerges). Relatives or friends might inform the *ejidatarios*, and they might have some input through the rural telephone system that is now available.

Avecindados. *Avecindados* have lived a few years in the *ejido* and have no land title. Without land title, the *avecindados* are not allowed to participate in the community's decision-making processes. Some of the *avecindados* who participated in this research expressed acceptance of this fact, but they also wished to participate in decision-making processes and community projects. *Avecindados* may informally discuss community issues in conversations with *ejidatarios* or by talking to the *comisariado ejidal*. One *avecindado* said that if

they do not maintain a good relationship with *ejidatarios,* they would rarely be taken into consideration.

Posesionarios. Reside in the rural communities but do not have either an *ejidatario* or *avecindado* title. They are people who settled without land title and are not legally considered property owners. They do not have a voice in decision-making, and their views are rarely taken into consideration.

Organized Groups and Local Associations

Local groups have emerged from within some of the communities, mainly the *ejido* of Alta Cima, where the representative of *Pro Natura* has predominantly worked. The *Organizate!* program through *Terra Nostra* led to the development of local groups in 1994 (S. Manzanares, personal communication, July 9, 2004). *La Fe* was the first of the groups with twelve women. They decided to process local fruit into jams and homemade wine and to sell embroidery for souvenirs at a local store (S. Manzanares, personal communication, July 9 2004; E. Jimenez, personal communication, August 16, 2004). *El Pino* is a male group of about 14 members who built and maintain a small hotel (A. Barriento, personal communication, August 16, 2004).

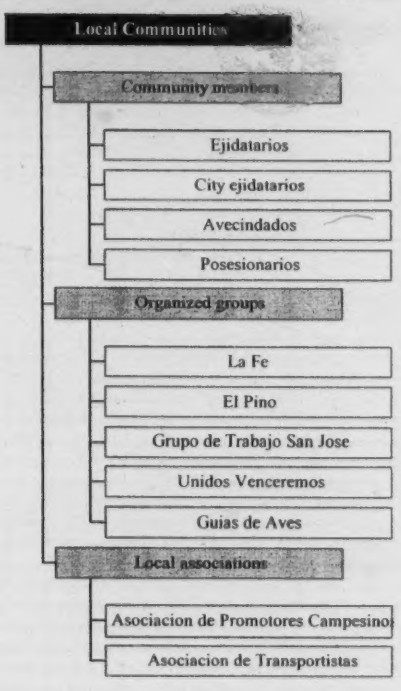
Local groups are also found in other communities along the ecotourism corridor. Some members of the community of San Jose also gathered together and created *Grupo de Trabajo San Jose*. They own a small restaurant and a room for rent (A. Barriento, personal communication, August 16, 2004). *Unidos Venceremos* is a group from La Gloria created by *posesionarios* who wished to

obtain financial help from government and NGOs for the development of sustainable projects (M. Garza, personal communication, August 21, 2004).

There are also local groups with members from various communities. With the help of *Terra Nostra* and the *Instituto de Ecología y Alimentos* (IEA – Institute of Food and Ecology) of the University of Tamaulipas, a third group was created. The *Grupo de Guías de Aves* is a recent group of people from different *ejidos* with an interest in environmental education, identification of flora, fauna, and bird species that are found in El Cielo (C. Rodriguez, personal communication, May 10, 2004).

The main local organization is the *Asociación de Promotores Campesinos* (Peasants Promoters Association). The members of this association represent the different groups that emerged from this program. They become trained and certified in different aspects relevant to the sustainable development of local communities as well as the conservation of biodiversity. Their responsibility is to share their knowledge with their own groups (S. Manzanares, personal communication, July 9, 2004). The main tasks of this group are to search for financial support and projects that might be of interest to the organized groups, and to monitor the groups' activities, transactions and distribution of the profits (S. Manzanares, personal communication, July 9, 2004; M. Garza, personal communication, August 13, 2004; E. Jimenez, personal communication, August 16, 2004).

Figure 2.3 Local Communities



Government

El Cielo biosphere reserve is managed by the state, recognized by the federal government, and covers four municipalities. Therefore, municipal, state and federal authorities are involved in managing and regulating the biosphere reserve. Municipal governments do not have major management responsibilities in the area. The presidents of each municipality are notified about activities in the *ejidos* and their possible impacts upon the municipality.

The government agency that manages El Cielo is SOPDUE. The main function of SOPDUE is to manage and regulate actions related to the preservation and sustainable use of natural resources, as well as sustainable development (F. Hinojosa, personal communication, July 9, 2004). Because the main functions of this secretariat cover a wide range of issues, it is subdivided into construction and

conservation, technical affairs, water resources, and sustainable development. The first must plan and implement strategies for the construction and supervision of public works and develop conservation programs. The function of the agency of technical affairs is to coordinate all actions for developing and revising public works. The agency of water resources plans, manages and controls all water and services. Finally, the agency of sustainable development formulates and conducts policy for human settlement through legal and administrative regulations (Gobierno de Tamaulipas, n.d.).

The agency of sustainable development covers regional and rural development as well as natural resources. The agency determines which areas will be protected, monitors environmental and sustainable use, manages and regulates wildlife. Even though El Cielo is managed by the state, some federal agencies have management responsibilities. Some of them also have authority over regulations and sanctions. The relevant agencies are the *Secretaría de Medio Ambiente y Recursos Naturales* (SEMARNAT – Secretariat of Environment and Natural Resources), the *Procuraduría Federal de Protección al Ambiente* (PROFEPA – Federal Attorney for the Environmental Protection), and the *Comisión Nacional Forestal* (CONAFOR – National Commission of Forestry).

The main function of SEMARNAT is to formulate environmental policy and establish a basis for sustainable development. Its main objectives are to protect biological diversity and endangered species, to reverse or mitigate negative impacts on the environment, and to encourage environmental education, research, and management (SEMARNAT, 2004). A sub agency of the

SEMARNAT is the *Comisión Nacional de Areas Naturales Protegidas* (CONANP – National Commission of Natural Protected Areas), which creates a national system of protected areas. It also manages and implements sustainable development plans for all protected and conservation priority areas (CONANP, 2003). Even though CONANP does not manage El Cielo, it recognizes the biosphere reserve in the system of national protected areas, and provides frameworks for management planning.

PROFEPA regulates environmental laws. Its main objectives are to monitor environmental laws and policies for all industrial and service activities, as well as in the use of natural resources (SEMARNAT, 2004). PROFEPA works in partnership with SEMARNAT to supervise and monitor the use of natural resources in protected areas as well as illegal extraction of species (M. A. Zamora, personal communication, August 11, 2004).

CONAFOR develops, fosters and promotes the conservation and restoration of national forests. Its main objectives are to promote conservation and restoration, to participate in the development of plans and programs relevant to forestry conservation, and to enforce sustainable forest development (CONAFOR, 2004).

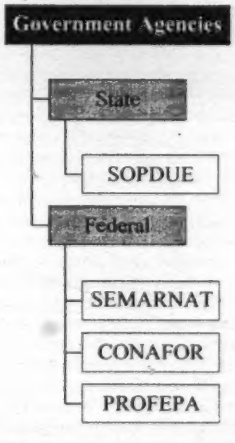


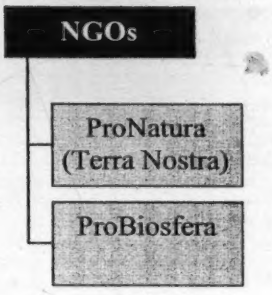
Figure 2.4 Government Agencies

NGOs

Two NGOs have worked with the local communities of El Cielo, *Pro Natura* and *Pro Biosfera*. *Pro Natura* is a national, non-profit, civil association with a mission to promote biodiversity conservation and sustainable balance for local communities. *Pro Natura*'s objectives are to promote environmental values and sustainable use of natural resources, and to support and generate scientific research (Pronatura, n.d.). *Pro Natura* began working with local communities of El Cielo in 1993 with an NGO called *Terra Nostra*. They were the first to approach some of the communities about the meaning of conservation and sustainable development (E. Jimenez, personal communication, August 16, 2004). One of the biggest projects that they have conducted with the local communities is the *Organizate!* Program. Through this program local residents were organized into different groups and educated about ecological and sustainable activities such as ecotourism (S. Manzanares, personal communication, March 11, 2004).

Pro Biosfera is a non-profit civil association that promotes environmental education, conservation and sustainable development in El Cielo and neighboring areas. One of *Pro Biosfera's* main functions is the promotion of environmentally sustainable projects in local communities. In order to reach their goals, *Pro Biosfera* has offered workshops to local communities about safety, environmental education, carpentry, identification of flora and rappelling. They have also conducted socio-economic studies.

Figure 2.5 NGOs



Visitors

There is no exact data about the visitors of El Cielo. The state government keeps a low registry of the tourism that enters the biosphere reserve. However, according to my observations and interviews with local residents and government agents, tourism in this protected area is mostly national. Tamaulipas and Nuevo Leon represent the largest tourism market. International tourists are mainly bird watchers from southern Texas and researchers from different universities around the world.

Visitors of El Cielo range from young adults to families. Adolescents usually travel in groups of four to fifteen people, families from three to six people and groups organized by travel agencies from fifteen to forty people. Most visitors stay in the cabins or camp. They also take hiking tours to the attractions. Regularly family groups take their own four-by-four trucks as far as San Jose (M. Garza, personal communication, August 13, 2004).

Description of Current Management

The management of El Cielo biosphere reserve falls within a State Administrative Council. The function of this council is to regulate and make sure

that all activities within the biosphere reserve follow the objectives of the existing management plan (F. Hinojosa, personal communication, July 9, 2004). The Administration Council is comprised of three levels of management: the executive board, the technical secretary board, and the specific comities board. The executive board is the highest level of management; its main functions are to discuss and make all final decisions regarding the activities that take place in El Cielo. This committee is comprised of a president, a secretary and two types of members (representative and technical members). The representative members are those who represent the local population, local interests, local projects and their issues of concern. The technical members are those that present proposals from government agencies or institutions relevant to environmental research, conservation and sustainable development.

The Technical Secretary is the second level of management in the administrative council. It is directed by the *Dirección de Medio Ambiente* (Direction of Environment) of the SOPDUE. Its main task is to periodically evaluate the activities that are taking place in El Cielo. It is responsible for revising and approving projects involving investigation, conservation and sustainable development.

The third level of management in the administrative council is the Specific Committees Board. This board is comprised of four committees: the scientific research committee, the sustainable development projects committee, the monitoring committee, and the use and permits committee. The scientific research committee is comprised of the *Instituto de Alimentos y Ecología* (IEA) (Food and

Ecology Institute) of the University of Tamaulipas. It conducts and/or participates in all scientific research in the biosphere reserve and compiles all the information obtained through the research. The sustainable development projects committee is in charge of conducting and/or participating in all sustainable development projects within the local communities of El Cielo. The monitoring committee is comprised of SEMARNAT, PROFEPA and CONAFOR. Its task is to maintain environmental stability and monitor for illegal extraction of species. The committee has sanctioning authority for violations of environmental regulations. Finally, the use and permits committee, which is directed by CONAFOR is in charge of issuing permits for sustainable use of natural resources, such as the old wood for housing and heating, and permits for *palmilla* harvesting.

CHAPTER 3: REVIEW OF THE LITERATURE

Introduction

This review of literature explains the basis of the research objectives and elucidates what this research is meant to achieve. Because natural protected areas conserve undisturbed biodiversity and maintain the cultural aspects from local communities, they have become popular sites for the development of ecotourism. Emerging from the idea of an alternative form of tourism, ecotourism aims to integrate the enjoyment of undisturbed natural places and the sustainable development of the communities within the visited area. Local participation has been recognized as an important factor for the sustainable development of local communities. The literature presents different approaches for the involvement of local communities in the development of ecotourism in natural areas. This research emphasizes the Collaborative Management approach for the sustainability of the local communities of El Cielo biosphere reserve.

Protected Areas

In 1994, The World Conservation Union (IUCN) categorized protected areas as "areas of land or sea especially dedicated to the protection and maintenance of a biological diversity, and of natural and associated cultural resources and managed through legal or other effective means" (cited in Swinnerton, 1999: p. 209). In a latter definition, the Convention on Biological Diversity (CBD) gave a slightly different concept as follows: "A geographically

defined area which is designated or regulated and managed to achieve specific conservation objectives" (Phillips, 2003: p. 8). Phillips (2003) makes a comparison from the two concepts and defines that protected areas:

- Require measures for its conservation such as designation, regulation, and dedication;
- Legal management or management by other effective means;
- Require a management authority to secure the conservation of the area.

According to the IUCN, the objectives of a protected area were directed only to biodiversity conservation and the enjoyment of visitors. Management of protected areas had no regard of local communities, they were areas run only by government, and founded by taxpayers (Phillips, 2003). Today, management objectives are emphasized in biodiversity conservation, environmental research, cultural conservation and sustainable development of the local communities (Phillips, 2003). Phillips recognizes that such a change of objectives creates a new paradigm for protected areas. The main elements are the following:

- Protected areas are now run with, for, and by local people. Recognition is now being given to the local residents as an important element for the management of protected areas.
- Protected areas are now managed to meet the needs of local communities. While local communities benefit from the activities of the area, conservation would be secured.

- Protected areas must be managed as part of a national, regional and international system. Such systems may serve as a partnership to exchange ideas and results.
- Strict protected areas may be developed as networks, linked by corridors and integrated into surrounding land managed by local residents.
- Management of a protected area must be guided by international responsibilities and duties as well as national and local concerns.
- Protected areas should be managed by people with a range of skills and valuing the knowledge of the local communities.

Protected areas have been divided into different categories by the IUCN depending on their primary objectives, going from strict conservation to allowing sustainable development and tourism activity (Swinnerton, 1999). UNESCO also defines protected areas as instruments for the conservation of biodiversity and ecosystems, such as biosphere reserves.

Biosphere Reserves

The concept of biosphere reserve emerged from the Biosphere Conference of UNESCO in 1986 which aimed to seek the reconciliation of conservation and the use of natural resources while searching for sustainable development (UNESCO, 2002). The objectives of this concept were: 1) to establish terrestrial and coastal areas that represent the ecosystems; 2) to conserve them and to provide an open door for the research of the same; 3) to monitor natural resources; and 4) to provide environmental education (Batisse, 2002). To achieve the

objectives of the biosphere reserve it is necessary to host a collaboration management approach and a distinctive geographical zoning scheme of a core. Such geographical zoning schemes consists of three areas: the core, the buffer and the transition area (Batisee, 2001; UNESCO, 2002). Within a biosphere reserve, geographical zones can be given different management plans depending on the objectives to be reached. The core area of a Biosphere Reserve can be managed as a World Heritage sitefor the strict conservation of biodiversity. The buffer zone can be managed as a National Park for the conservation of wildlife and the development of sustainable tourism (see Batisee, 2001).

Unlike any other protected area, Biosphere Reserves reach their objectives through scientific research, monitoring, and training activities. Its objectives also include the local communities' interests (Batisee, 2001).

Biosphere Reserves in Mexico

Mexico is one of twelve countries in the world recognized for their globally significant biodiversity, hosting approximately 10 percent of the total species in the world in just 1.4% of its territory (CONABIO, 1998). Concerned about the degradation of biodiversity, Mexico started to protect natural areas by the end of 1940. Recent data indicate that Mexico contains more than 148 federal protected areas covering a territory of 17 million hectares (CONANP, 2003). About 35 of the protected areas in Mexico are biosphere reserves. The concept of biosphere reserves in Mexico has been based on the global concept provided by the IUCN, yet some objectives have been added to develop the "Mexican form of

biosphere reserves." Keeping in mind that a global concept might not be applicable in the same way in each country, the development of the Mexican form of biosphere reserve tries to meet the needs faced by the communities and management of Mexican biosphere reserves (Halffter, 1989). These objectives take into consideration the following issues:

- Participation of local communities in the conservation of biodiversity.
- Incorporation of local socio-economic issues into the research concerning and management of sustainable development.
- Scientific and conservation research being entrusted to universities and research institutions.
- Biosphere reserves considered as part of a global strategy for the sustainable use of natural resources.

Biosphere Reserves in Mexico differ from the concept given since they cannot include a sub-categorization such as World Heritage or a National Park in any of its zones. The categorization of Biosphere Reserve in Mexico is part of the classification of the Mexican protected areas. According to CONANP, no protected areas can have a sub-categorization, except for the areas declared for the protection of natural resources. El Cielo Biosphere Reserve was declared as a result of the concern for conservation of the ecosystems and to achieve a harmonic balance between biodiversity conservation and the development of local communities. Sustainable activities have been recommended to the local communities for their sustainable development; tourism is one of them.

Tourism and Sustainable Development

According to the World Tourism Organization (WTO), tourism is the world's largest industry. The first eight months of the year 2004 reported an estimated growth of twelve percent, corresponding to an increase of 58 million arrivals (WTO, 2004). The two basic benefits of tourism were income and employment. There were two elements of income in this context: money spent by tourists on services, food, and souvenirs, and money spent by service providers. All goods purchased by the local service providers such as groceries, meat and transportation of employees' created indirect income to the region (Colton, 2000; Wahab and Pigram, 1997). Improvements in transportation, water quality, public works and sanitation were benefits from the development of a larger scale of tourism, also called mass tourism (Wahab and Pigram, 1997). Once the benefits of tourism were addressed, it was necessary to also view the second side of the tourism effect. Mass tourism required several costs in order to obtain the above benefits. Such costs were quality of life, environmental, and economic costs (Butler, 1992; Mouforth and Munt, 2003; Wahab and Pigram, 1997).

The development of mass tourism may bring big changes to a place. Physical costs of mass tourism can be defined as degradation of the environment, pollution of water, compaction of soil, and deterioration of cultural attractions. Some of the economic costs were the rise of taxes, inflation (goods, transportation, land), profits directly going to international business, unequal distribution of financial benefits, and economic dependence from local residents.

Sustainable tourism emerged as an alternative form of mass tourism as people realized that the current development was destroying natural, social and cultural resources (Colton, 2000; Mouforth and Munt, 2003; Pigram and Wahab, 1997). During the 1970s and the early 1980s, new forms of tourism emerged in developing countries in search of small scale and low environmental impact tourism with a high involvement and participation of local communities (Pearce, 1992). The form of sustainable tourism was created and reinforced by different events.

- In the 1980s, the Brundtland Commission, along with the World Conservation Strategy (International Union for Conservation of Nature and Natural Resources), and the Charter on Sustainable Tourism from the World Conference on Sustainable Tourism, recommended a strategy to be used globally for the development of any economic activities, including tourism (Gartner, 1997);
- In 1992, Agenda 21 was endorsed by the Rio Summit in Brazil, setting out principles for sustainable development for the twenty-first century which must be followed by the government and institutions for the sustainability of the tourism activity. Such principles included action to combat poverty, to support environmental health, protect biodiversity, prioritize local planning, and improve education. (Barones Chalker, 1994; Mowforth and Munt, 2003).

The Brundtland Commission in the 1980s defined sustainable development as "development that meets the needs of the present without

compromising the ability of future generations to meet their own needs" (cited in Pigram and Wahab, 1997: p.3). Yet, the description does not mention the environmental factor of sustainable development. Going back to the meaning of development, Wall (1997) expressed it as "concerned with human betterment through improvement in lifestyles and life opportunities" (p.34). Hana (1992) emphasized the environmental and social balance in her description of development as "a wide activity that should never be divorced from a serious and concerned consideration of environment and society" (p. 16). Sustainability has been expressed as "the idea that humankind must live within the capacity of the environment" (Pigram and Wahab, 1997: p.18). Therefore, sustainable development can be described as a way to improve life of humankind through the recognition of a balance between society and the environment. The term sustainable development may be interpreted in different ways:

- As a philosophy, development refers to the perspectives for achieving future states and means;
- As a process, development refers to the methods to follow for the achievement of future states and means;
- As a plan, refers to the specific steps for the desired achievement;
- A product refers to the level of achievement of an individual or society (Wall, 1997: p. 34).

The concept of sustainable development is complex and can easily be misunderstood through failure to identify the aspects that are being discussed.

Mouforth and Munt (2003) believe there is no definable concept of sustainable tourism and rather assess the principles that complement the concept of sustainable development.

- Ecological sustainability refers to the need to minimize negative environmental impact due to tourism activities;
- Social sustainability is the ability of a community to absorb outsiders for short or long periods of time without the creation of a social disharmony;
- Cultural sustainability is the ability of local communities to retain their cultural traditions and elements after development of tourism;
- Economic sustainability refers to the level of economic growth from tourism and to the economic benefits that cover or surpass all the costs caused by tourism.

The above principles complement the "Development Triangle" presented by Hana (1992). This triangle indicates that no development can be made if there is no balance between the economic, environmental and social elements.

Sustainable tourism development has been expressed as a shift from merely economic approaches in tourism development to a more holistic approach, in which the community and the environment share a part (Colton, 2000) and where the principles of sustainable development have served as foundation for several sustainable tourism strategies (see Colton, 2000). Managers and organizations must recognize the importance of all principles. Of particular

relevance to this research is the participation of local communities in developing tourism projects.

Ecotourism

According to the World Tourism Organization (WTO) ecotourism has become the fastest growing sector of the world's largest industry, which is tourism. Twenty percent of the world travel was marked as ecotourism (WTO, 1998). Ecotourism generated an approximate global economic impact annually of 93 billion to 233 billion dollars (Campbell, 1999).

There are many definitions of ecotourism; some give more attention to environmental concerns. Budowski was the first to emphasize the integration of tourism and conservation (Orams, 1995). Ceballos-Lascurain in 1988 gave the first definition of ecotourism as "traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas" (see Boo, 1990). The Australia's National Ecotourism Strategy in 1994 defined ecotourism as "nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable (cited in Nianyong, 2001). The above definitions expressed mainly the environmental and cultural opportunities that ecotourism provides but fall short in the involvement of local communities. In a later definition, Ceballos-Lascurain (1998) expressed tourism as "a tool to potentially use for a locally-oriented development and for the

protection of the natural ecosystems" (p. 11). Wight (1994) described ecotourism as "an enlightening nature travel experience that contributes to conservation of the ecosystems while respecting the integrity of host communities (p. 39).

Various concepts can be found in the literature giving different descriptions of what ecotourism means; however, there was general agreement of the principal characteristics of ecotourism (Barones Chalker, 1999).

- It must attract tourism to natural environments;
- It must encourage to protect and not to damage the environment through education, changing attitudes, community development and political priorities;
- It should respect the social and cultural traditions of the area; and
- It must ensure the social, cultural and economic benefits of the host communities.

Some of the major interests in studying ecotourism cases were the potential for conservation, economic impacts, the participation of local communities and sustainable development of local communities. Kiss (2004) observed that community-based ecotourism has served as a tool for biodiversity conservation. Ecotourism depended on the aesthetics of the flora and fauna and the undisturbed environment; therefore, helping communities obtain an economic benefit from ecotourism provideed both an incentive for conservation and an economic opportunity. (Ceballos-Lascurain, 1998; Kiss, 2004).

In Costa Rica, local peasants lived from the logging activity in the rainforest and as professional hunters. They used their hunting ability to guide

tours into the *Selva Verde* jungle and provided the tourists with a close experience with the wildlife. They earned more from tourism than they earned from hunting (Warner, 1991). The government of Mozambique realized the attraction of tourism to protected areas and established large conservation areas as a tourism development strategy (Kiss, 2004). Ecotourism do not only contributed to conservation through the local residents, but also through external sources such as NGOs or voluntary contributions from tourists. In the Mayan Forest, NGOs from Mexico, Guatemala and Belize supported conservation programs by selling tours, publications, maps or souvenirs and using the profits for conservation and sustainable development programs. Visitors contributed with amounts above their trip cost to support conservation projects in the visited areas (Norris, Wliber, and Morales, 1998).

Ecotourism was also a tool for economic growth. Through ecotourism local communities such as El Cielo's found employment as tour guides, in the accommodation business, food services, and transportation (Medellin, 1997; Ceballos-Lascurain, 1998). In various developing countries ecotourism became an important source of income. In 1993, ecotourism in Costa Rica surpassed the banana industry, which was the number one industry at a national level at that time (Norris, 1994). In Kenya, wildlife observation generated fifty times more income per hectare than agriculture (Cottrell, 2001).

Local participation in tourism development has become a research interest. Local residents can provide key information to make decisions and to ensure equity and justice (Drake, 1991). Local involvement in ecotourism projects

contributed to sustainable development in the communities. Initiatives for community involvement in the ecotourism activity were collaboration management (Jamal and Getz, 1995; Roberts and Bradley, 1991; Selin, and Schuett, 2002; Selin and Chavez, 1995; Schuett, Selin and Carr, 2001), community based ecotourism (Foucat, 2002; Kiss, 2004; Norris, Wilber, and Morales, 1998), participation action research (Guevara, 1996; McTaggart, 1991) and community participation frameworks (Kapoor, 2001; Venter and Breen, 1998; Yung, 2000). This research placed particular interest in the collaboration management approach.

Collaborative Management

Derived from the Latin word *collaborare* (*col* which means "together" and *laborare* "to work"), collaboration was defined as "working together" (Oxford Reference Online, 2004). The term *elaboration* was defined as "the process of producing or developing from crude materials" (cited in Roberts and Bradley, 1991). Therefore, according to the above definitions, collaboration can be defined as a process where two or more individuals work together to develop something.

Various concepts of collaboration were given through literature. Gray (1989) defined collaboration as "a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible" (p. 5). Gray emphasized the fact that collaboration was a process where two

different parties with disparate objectives work together to obtain a common end in order to solve a problem they cannot solve on their own. However, Roberts and Bradley (1991) provided a definition containing social elements that must be present in the collaboration process. "Collaboration is a temporary social arrangement in which two or more social actors work together toward a common end requiring the transmutation of materials, ideas and/or social relations to achieve that end" (p. 212). Such social elements were transmutational purpose, explicit and voluntary membership, organization, interactive process, and temporary property (time). The first social element requires the parties to share and direct their goals to develop a common end. Parties must participate freely and have agreed to work with the rest of the participants. Working in an organized way meant they must agree and stipulate a set of frameworks and/or rules to determine direction of the process. Interactive process developed sustained and reflexive interactions with the different parties. Finally, temporary property (time) meant that collaboration was a temporary social form that led to a common end; once the common end has been reached, collaboration iwas dissolved (Roberts and Bradley, 1991).

A collaboration model started from a context labeled antecedents, proceeded through a problem-setting, direction-setting and ends in a structuring phase (Selin & Chavez, 1995). The antecedents were considered to be the forces that can lead to collaboration. Selin and Chavez (1995) provided seven antecedents in their collaboration model: crisis, third party involvement or a broker, legally mandated by law or by the managers, through common vision,

usually for a project, through existing network, through leadership where a leader with a vision involves others to participate, and through incentives to potential partners such as managers and private stakeholders.

Problem setting was the first developmental stage of collaboration. In this stage key stakeholders were identified, participants became aware of interdependence, common issues and benefits were identified as well as outcomes for the stakeholders. Direction setting was the second developmental stage. Here, participants identified a common purpose, goals, rules, and subgroups for teamwork. Structuring consisted of formalized responsibilities and designing a framework to be followed. Finally, the outcomes were presented with their respective benefits and impacts and participants decided if they wished to continue with further collaboration (Selin & Chavez, 1995).

Benefits from collaborative management included the ability of stakeholders to improve communication and learning through information exchange and co-sharing between agencies. Respect for stakeholders and stewardship of the area were also important benefits from this approach. Collaborative management provided local communities with a voice in decision-making, as well as political and cultural empowerment. Local communities obtained direct economic benefits by local hiring and research work. Finally, once stakeholders have worked in a collaborative approach, they increased their cultural understanding by sharing ideas and working with different individuals (Selin & Chavez, 1995; Selin, Schuett, & Carr, 2000; Weitzner & Manseau, 2001).

Collaboration may or may not be a complicated approach, but just as this approach generated benefits, it also brough challenges to the individuals, groups or organizations involved. Partnership could be difficult at the beginning; different perspectives, roles, authority and power may become issues in the adapting process of a working team. It would be beneficial for participants to have the same understanding of protected areas before they develop the objectives of a collaborative process, otherwise issues of conflict may emerge. Resources such as time and money were delicate; good use of them was important. Clarifying roles and responsibilities may become difficult due to the different levels of participants; increasing communication may help on this issue. Because low and high levels of authority might be involved in a collaborative process, equity must be ensured among all board members. It was also important that local communities understand the value of a collaborative approach, since their participation was crucial for management development (Weitzner, 2001).

Some of the negative consequences and costs raised by participants of the collaborative approach should be addressed. Two types of costs were outlined in the literature (Selin, 1989): costs to the individuals/organizations taking part in the collaborative approach and costs to the community or state. Costs for the individual/organizations included the transition cost; the initiative process required early and substantial investments of time, money, and human resources. Participants may have become involved in a collaborative process because of the benefits this process promises; their morale and support may deflate if such benefits do not exceed the cost of participating. Costs to the community/state

were those that surged within groups of participants such as agencies, organizations, communities and/ or the state. Participative agencies may or may not be willing to share authority and responsibility in a collaborative process; opposition from such parties tended to constrain success in collaboration. Large groups may manipulate to serve their special interests, giving veto power to the minorities over important decisions that were of great importance (Selin, 1989).

There were some factors addressed in literature that help ensure success in a collaborative approach. Such factors were high levels of civic engagement, broad public interest, strong leadership, and being able to enabling legal and organizational support (Selin, 2000). There were also constraints that can obstruct collaboration's success. Such factors were: power vested in elite organizations, lack of incentives to participate in the process, historical and ideological barriers, and different perceptions among the parties, political and institutional cultures, and technical complexity (Gray, 1989; Selin, 2000).

Applying a collaborative approach for the development of ecotourism of El Cielo biosphere reserve may achieve a balanced sustainable development within the local communities and ensuring benefits to all of the communities and to the protection of biodiversity.

Conclusion

This literature demonstrated the importance of ecotourism for the sustainable development of communities living in protected areas. Key issues discussed in this literature included the principles for a sustainable development, the

importance of ecotourism in the development of local communities and the participation of local communities for achieving sustainable development. It was noted that while ecotourism presents a benefit for local communities, it might become an incentive for conservation of biodiversity. Well-planned ecotourism that can be considered as a valuable framework for development required the recognition of the key elements of sustainable development. If the ecotourism activities support ecological, social and cultural sustainability, then ecotourism can be considered a tool for sustainable development of local communities. It was noted that community participation was also an essential element for developing sustainable ecotourism. Participation of stakeholders will allow ecotourism the conclusion to a common end on how ecotourism must be developed to meet the needs and aspirations for protected areas.

CHAPTER 4: METHODOLOGY

Introduction

This study used a qualitative approach in order to cultivate a deep understanding of the present situation of collaboration in El Cielo. The methodology tried to answer two main questions: What is the current state of collaboration in the ecotourism corridor of El Cielo biosphere reserve? How possible is collaborative management in this protected area? In order to solve these questions it was necessary to study both the processes for involving local people into decision-making and the communication processes between different stakeholders (local residents, NGOs, government agencies, and research institutions). I chose to use semi-standardized interviews and observation to explore the different stakeholders' participation in communication and collaboration processes.

Research design

The methodology followed a series of steps in order to reach the goal of the research: (1) elaboration of main research themes, (2) identification of participants and their relevancy to the research, (3) obtaining research consent, (4) development of qualitative methods, and (4) codification and analysis of the data generated.

Research Themes

From the literature on collaborative management (Avila Foucat, 2002; Borrini-Feyerabend, 2000; Jamal & Getz, 1995; McAvoy, Schatz, & Lime, 1991; Selin & Chavez, 1995; Selin, Schuett, & Carr, 2000), stakeholders' participation in the management of protected areas (Kapoor, 2001; Lewitsky, 2002; Nepal, 2002; Yung, 2000), and ecotourism in developing countries (Campbell, 1999; Ceballos-Lascurain, 1998; Nianyong, 2001; Wall, 1997), I developed a list of themes to help frame the sample of the research.

Table 4. 1 Themes and sub themes used for the design of qualitative methods.

Primary themes	Sub themes
Participation of Local Communities	▪ Worked with other stakeholders in the development of any ecotourism service? ▪ Means of local communities participation - i.e. meetings, activities within the communities, and networks ▪ Benefits from projects - i.e. financial, networking, increase of tourism ▪ Training programs - i.e. accounting, English language, rappelling technique, caving certification
Communication among stakeholders	▪ Process of information for project development - i.e. meetings, documents, promotion ▪ Who is informed in the communities ▪ Communication networks among stakeholders ▪ How stakeholders discuss issues of concern
Collaboration between Stakeholders	▪ Shared goals and vision - People working towards a common goal ▪ Benefits from collaboration ▪ Barriers to collaboration
Tourism	▪ Benefits ▪ Outcomes ▪ Goals

I first developed a primary list that contained general themes from the literature. Then I developed a second list of themes that related to my specific research questions and that were significant to the protected area. Table 4.1 presents the list of primary themes and their subcategories:

Sample and Data Collection

Once I identified the main themes, I created a list of stakeholders' categories for my primary sources: local communities, government agents, non-governmental organizations, entrepreneurs, as well as financial and research institutions. To apply these general categories to El Cielo biosphere reserve, I generated a specific list of stakeholders guided by both Borrini-Feyerabend (2000), who gave a description of the different groups that are affected by a protected area's management, and my experience from previous visits to El Cielo. Borrini-Feyerabend's framework is most similar to the stakeholders that were identified in visits to the protected area. The use of multiple sources (e.g. government web pages, official webpage of the biosphere reserve, electronic publications from *Pro Natura*, and networks from key people) allowed me to generate a primary list of interviewees; others were added after suggestions from interviewees and my observations (Hammersley & Atkinson, 2001). Generating a list of potential interviewees helped assure different types of stakeholders with divergent views. Participants were selected with a general purposive sample, that is, I "purposely" selected individuals who I thought would give significant information for the research. The sample included a mix of decision makers as well as individuals not involved in decision-making, but affected by those

decisions. Some participants were selected as key individuals because of their role in management or decision-making processes. Table 4.2 provides a description of the participants chosen for this study, their relevance, and research approach. Table 4.3 indicates the number of participants for each research group.

The first four sample categories were formed by local residents (community members, community-based groups, non-government bodies that link different relevant communities, and local political leaders). A small sample of the community members was appropriate, because this study aimed to generate intensive rather than extensive data.

I interviewed a total of forty-two stakeholders. The number of interviewees under the category of community members depended on the participant's relevance to the study. For example, I interviewed more men than women, because they participated in decision-making. This is not to say that women are less important, but the legal system and/or old communities' systems place men as the formal decision makers.

Table 4.2 Categorization of research participants

Category Group and type of sampling	Stakeholder	Relevance in Study	Research Approach
Community members (Purposive Sample)	Ejidatarios (men)	▪ Head of the household ▪ Only member of the community and the family who is allowed by law to participate in the ejido's decision-making processes. ▪ Decisions in the community are usually taken by men.	Semi-standardized interviews, observation, and informal conversations
	Ejidatarios (women)	▪ Are not allowed to participate in decision-making processes unless they are widows	Semi-standardized interviews, observation, and informal conversations
	City Ejidatarios	▪ Do not live within the community, therefore they are sometimes excluded from decision-making processes and information sessions. ▪ Do not participate in development of projects because they do not live in the community.	Semi-standardized interviews and observation
	Avecindados	▪ Are excluded from community's decision-making processes. ▪ Are sometimes excluded from sustainable development projects. ▪ May not become informed about projects.	Semi-standardized interviews, observation, and informal conversations
	Posesionarios	▪ Are excluded from	Semi-

		development of projects and decision-making processes in the *ejidatarios*' meetings. ▪ Have no rights over the *ejido*, therefore no voice.	standardized interviews
Organized Groups (Purposive sample)	La Fe (Alta Cima)	▪ Group comprised by women only ▪ Illustrate how decision-making and project development is carried out by women of the community ▪ First organized group to be created	Semi-standardized interviews, observation, and informal conversations
	El Pino (Alta Cima)	▪ Group comprised by men only ▪ Illustrate how communication works within the group and with the women group of the community ▪	Semi-standardized interviews and informal conversations
	Grupo de Trabajo San Jose (San Jose)	▪ Group comprised by both men and women ▪ Only organized group of the community	Semi-standardized interviews
	Unidos Venceremos (La Gloria)	▪ Group comprised by posesionarios ▪ Creation of the group served as formal identity before the legal system ▪ Illustrate how community members who are not ejidatarios may find a way to develop sustainable projects and decision-making processes	Semi-standardized interviews and informal conversations
	Grupo de Guias de Aves (Alta Cima. San Jose, La	▪ Only group comprised by members of different communities	Semi-standardized Interviews

	Gloria)		
Local Associations (Key informants)	Asociación de Promotores Campesinos	▪ Group comprised by leaders of all the organized community groups ▪ Decision-making in this group affects	Semi-standardized interviews, observation, and informal conversations
Local Political Authorities (Key informants)	Municipal President of Gomez Farias	▪ Must support *comisarios ejidales* in conflicts, community needs and projects ▪ He/she may or may not affect in communities' decision-making ▪	Semi-standardized Interviews
	Comisarios ejidales	▪ Community leader ▪ Development of community depends on him/her ▪ Final decisions are given by him/her ▪ He/she may or may not be the most powerful leader in the community	Semi-standardized Interviews
Non-governmental Organizations (Key informants)	Pro Natura	▪ First NGO to approach the rural communities of El Cielo ▪ Targets only community organized groups for the development of sustainable development project ▪ Develops various training and certification programs ▪	Semi-standardized interviews, observation, and informal conversations
	Pro Biosfera	▪ Regional NGO ▪ Works with communities, not with groups ▪ Develops training programs	Semi-standardized interviews and informal conversations

Government Agencies (Key Informants)	SOPDUE	▪ State agency in charge of the administration of the protected areas ▪ Relationship with the rural communities may determine their level of collaboration	Semi-standardized interviews
	SEMARNAT	▪ Federal agency in charge of the national protected areas ▪ Provide permits to the rural communities for use of natural resources ▪ Management of the protected area must follow their guidelines	Semi-standardized interviews
	CONAFOR	▪ Develops sustainable development projects with the rural communities ▪ Sees for the conservation of the natural resources ▪	Semi-standardized interviews
	PROFEPA	▪ Do not interact with rural communities ▪ This agency only stipulates legal regulations that must be followed in the protected area	Semi-standardized interviews
Universities and Research Organizations (Key informants)	Instituto de Alimentos y Ecologia UAT (IEA)	▪ Develops environmental research in the protected area as well as conservation projects ▪ Was a part of the declaration of El Cielo as a protected area	Semi-standardized interviews

Given a similar decision-making structure, leaders and some group members from organized groups (also called community based groups) were approached. Informal

interviews were mostly conducted with group leaders while informal conversations were used for group members. I was unable to interview the leaders of the groups *Grupo de Trabajo San Jose* and *Grupo de Guías de Aves*, because they were not available at the time of my research. In the case of the *Grupo de Trabajo San Jose*, I conducted an interview with one of the group members. As for the *Grupo de Guías de Aves*, I had an informal conversation with a group member. The female group of *La Fe* allowed me to observe their monthly meeting and make notes about their communication and decision-making processes. Observations also took place when members interacted with NGOs and visitors.

I approached two local associations: *Asociación de Promotores Campesinos* and the *Asociación de Transportistas*. I interviewed the leader of the first and generated data by observing their monthly community meeting. The *Asociación de Transportistas* was a new association. I interviewed two members; one of the members was a candidate for the leadership position of the association.

Three local political authorities participated in this research, the president of the municipality of Gomez Farias and two of the *comisariados ejidales* (Alta Cima and Joya de Manantiales). These participants were recognized as key informants because of their relevant role in decision-making, and semi-standardized interviews were used. It was not able to observe how decision-making happened with the *comisariados ejidales* because only men participate in the community's decision-making.

Table 4.3 Number of participants under sample categories

Respondents Group	Description of Participants	Interviews	Informal Conversations	Total
Community members	Men	5	3	8
	Women	3	2	5
	City *Ejidatarios*	0	3	3
	Avecindados	3	1	4
	Posesionarios	2	0	2
Organized Groups	*La Fe*	1*	1**	2
	El Pino	1*	1**	2
	Grupo de Trabajo San Jose	1**	0	1
	Unidos Venceremos	1*	0	1
	Grupo de Guías de Aves	0	1**	1
Local Associations	*Asociación de Promotores Campesinos*	1*	0	1
Local Political Authorities	*Asociación de Transportistas*	2**	0	2
	Municipal Presidents	1	0	1
	Comisariados Ejidales	2	0	2
NGOs	*Pro Natura*	1	0	1
	Pro Biosfera	1	0	1
Government Agencies	SOPDUE	1	0	1
	SEMARNAT	1	0	1
	CONAFOR	1	0	1
	PROFEPA	1	0	1
Universities and Research Institutions	*Instituto de Alimentos y Ecología*	1	0	1
		30	12	**42**

* Leader of the group, ** Group member

I interviewed agents of the two NGOs (*Pro Natura* and *Pro Biosfera*) that worked in the protected area. I traveled with both of the agents (one at the time) because it allowed me to have informal conversations. Since meetings did not occurred during the data collection phase, I only observed interaction between the NGO representatives and local communities.

Participants from government agencies were approached in Ciudad Victoria. In each government agency I was directed to individuals who were key informants for projects developed between the agency and the rural communities. Unfortunately no government agents visited the rural communities during my visit to the protected area.

In the case of the IEA, I approached one individual who had conducted socio-economic research with the rural communities. I used semi-standardized interview in Ciudad Victoria. No researchers from this institution visited the protected area at the times of my research; therefore I have no observations in regards to this institution.

Consent

Prior to my research trip to Mexico, I received approval from the Faculty of Physical Education and Recreation Research Ethics Board at the University of Alberta in January of 2005 (see Appendix I). I also had to obtain authorization from the office of Natural Resources of the SOPDUE (see Appendix II).

Research Instruments

Rubin and Rubin(1995) stated that in order to comprehend and understand complicated issues in a social setting "you have to let them [the interviewees] describe their own experiences in their own terms" (p.17). Therefore I used semi-standardized

interviews which allowed the interviewees to express in their own words their personal concerns about the development of tourism or about the management of the area. I decided to use observation as a second method to apply theoretical triangulation and compare some data related to the same phenomenon such as communication, decision-making and conflicts (Hammersley & Atkinson, 2001). Observation was also used to generate some of the data that could not be obtained through the interviews such as informal processes and tourism services.

Semi-standardized interviews

Semi-standardized interviews involved informal predetermined questions similar to conversations or discussions and allow the interviewer to ask questions not previously prepared and/or to follow a list of research topics instead of questions (Berg, 1998; Mason, 1996). I chose to use semi-standardized interviews to focus on participants' words and the present setting of stakeholders in the management and decision-making processes. The open-ended questions (see Appendices V-VIII) revolved around decision-making among communities, groups, agencies, or institutions. Questions also asked participants to talk about issues that concern them and suggestions to improve in the management system. Semi-standardized questions allowed me to identify differences in the perceptions of interviewees about decision-making processes.

The design of the interviews was framed according to Table 4.1 and five types of interviews were created according to the different stakeholders. From each theme, I generated a set of questions that best suited the objectives of the research: 1) identifying stakeholders and their participation in the management and development of the area; 2) identify processes of communication, project development, and decision-making; 3)

identifying collaboration among stakeholders and issues that may or may not support collaboration; and 4) identifying perceptions of tourism. Themes that the interviews had in common were:

- Personal information: name, age, social status in the community (if applicable), task in the political, social, or local group/agency (if applicable), economic activity (applicable to local residents).
- About the community, group, agency, organization: objectives, projects, conflicts within group and with other stakeholders.
- About collaboration: communication within the community, the group, the agency, the association, communication with other stakeholders, participation in political, social, or local groups (if applicable), participation in community activities, conflicts within the community, the group, and the agency.
- About the meetings: community, organized group, or project meetings.
- About tourism: benefits, outcomes, concerns, needs.

One of the benefits of using qualitative interviews was that they can be redesigned according to shifts in the research. Rubin and Rubin (1995) suggested that "qualitative interviewing design is flexible, interactive, and continuous" (p.44). An increased emphasis on the collaborative elements led to a redesign of interviews focused on collaborative management rather than tourism. For example, the first interviews contained questions related to tourism (e.g. what tourism services would you like to have in the community? When are the highest and the lowest season of tourism?). I intended to address these tourism issues as part of the first stage to identifying shared issues of

concern. However, through the process of fieldwork and reflection on the data, I realized the best thing was to narrow down my research and address collaborative management.

Qualitative interviews were conducted from February to April of 2005 and took place in El Cielo biosphere reserve and Ciudad Victoria, Tamaulipas, Mexico. Interviews were held in different places depending on the interviewees' choice. The majority of the interviews took place in El Cielo biosphere reserve. Interviews with municipal leaders and government agents took place in their municipality and in Ciudad Victoria, Tamaulipas.

Prior to the interviews, participants from Ciudad Victoria and municipal presidents were contacted through e-mail and/or phone calls. I explained the purpose of the research and why their participation was important. In the case of the participants from the rural communities, I visited their houses or business in order to explain the purpose of the research and to set a time and date for the interview. Some people decided to give the interview right away, others arranged to meet another day.

Before conducting the interview a letter of information was personally handed to each of the interviewees specifying the purpose of the research, information about the researcher, and the benefits (see Appendix III-IV). The letter also specified their rights as participants, lack of possible risk, as well as information about who can they contact. This was also explained at our meeting. Prior to the interviews I asked if the participants had read the information letter. I then presented the form of consent to read and sign (see Appendix IX-X). Because some of the participants from the rural communities had difficulty reading, I offered to read both the letter of information and form and showed them where they were to sign. For the people that had difficulty writing

as well, their verbal consent was recorded on the interview tape. Once consent was given by the participants (written or verbally recorded) I proceeded to record the interview.

The interviews were scheduled to last approximately one hour and a half. As is common in qualitative interviews, the actual length of the interviews varied. Some of them took approximately forty minutes while most were one hour and a half. Interviews with the local residents were usually the longest.

At the end of the interview I asked participants to express their thoughts and feelings about the interview. The purpose was to make sure participants felt comfortable with the interview and help redesign interviews for future use. Once the interview was over and I turned off the recorder, I thanked each of the participants and gave them a Canadian souvenir.

Settings often varied in the rural communities. Three of the interviews with women took place in their kitchen: Two of them were cooking, and the third decided it was the best place to talk. One of the women was interviewed in a small store owned by her husband. Two more women wanted to be interviewed outside their house: one of them sitting on some rocks, and the other in some rocking chairs she had just outside the door.

As for the men, two of them gave me the interview in their kitchen. In both cases I was directed to the kitchen by their wives. One interview was held right after a group leaders' meeting outside the "*La Fe's*" restaurant. The remaining two interviews were held outdoors. In both interviews the participants (one tourist guide and one driver) and I were sitting on the grass while waiting for visitors to return from a tour. Informal conversations took place while having coffee or walking the cattle.

Two of the interviews with government agents were held in their offices. Two others asked to meet at a cafe in Ciudad Victoria, because of distractions in their offices. Interviews with representatives from *Pro Natura* and *Pro Biosfera* took place in El Cielo. The representative of *Pro Natura* was interviewed at *La Fe's* small restaurant and while driving his truck back to the city. The representative of *Pro Biosfera* was interviewed outside some tourism cabins. Informal interviews were also held between the representatives of *Pro Natura* and *Pro Biosfera* while walking to people's houses or while traveling in the truck. Finally, the researcher from the *Instituto de Alimentos y Ecología* decided to give me the interview in her office, because it would be difficult to schedule it outside her work hours.

Data gathered in the interviews was recorded and notes were taken. Taking notes allowed me to remember things that came out in the interview. Each night, I wrote in my journal. Reading my journal and some of the interviews at night helped me review the data I gathered and see if I was missing something or if I had more questions. If so, I tried to approach the interviewee one more time. I stopped the process of interviewing when I reached a point of saturation and realized that participants were giving the same explanation of community, group, and government meetings, talking about the same community issues, and talking about ways of communication that related to networks that I had already identified.

Observation

Observational research is recognized as one of the traditional sources of generating data within the social sciences. Based on the four possible research identities given by Burgess (cited in Cassel and Symon, 2004) – complete participant, participant

as observer, observer as participant, and complete observer – I described my research role as observer as participant. I interacted with the participants; however, I was not a full participant in their activities. During the fieldwork, I interacted with local residents by walking with them to visit friends or relatives, dining with families, assisting with animal care (e.g. feeding and walking the animals), traveling to other communities, drinking coffee, and traveling with tourists. I was not a full participant, because I did not spend enough time in the communities to carry out activities as if I was one of them. I felt more like a visitor than a member of the community. Although I grew more confident in the relationship with some participants, I developed only limited trust. Local communities knew my identity as a researcher.

I took two trips to the biosphere reserve: the first trip was in February of 2005 for a period of approximately 15 days, and the second trip was at the end of February and beginning of March in 2005 with a stay of approximately 20 days. I began observations at Ciudad Mante, the town from which tourists start their journey. Some of the first data gathered was about how *fleteros* do their business in the plaza, waiting for tourists to come and ask for their service. In this setting I studied how *fleteros* approached the tourists and how they interacted with the rest of the *fleteros*. For example, the *fleteros* from San Jose stand on one side of the plaza talking, while on the other are some *fleteros* from other communities. Data was also gathered while traveling with the *fleteros* to the communities in the ecotourism corridor. Sometimes I would sit next to the driver to talk or to be present when they paid the toll at the communities of Alta Cima and San Jose. Other times I would sit in the back with the tourists to hear the explanations *fleteros* give to tourists about attractions, the communities, and the environmental interpretation.

Observation also allowed me to study *fleteros* interaction with the people from the different communities, for example when the *fleteros* stop at the store of Alta Cima.

Interacting with the members of the rural communities allowed me to attend two of the organized groups meetings with permission from the group leaders. In some cases I was able to see how the group or community members met before the meeting discussed issues that later arose in the meetings. One of the meetings I observed was from the female group "*La Fe*". The women allowed me to sit in their circle. The group had to discussed two projects: the first was about the progress of a plant nursery which was founded by a man from the U.S. The funding supported various plants species found in El Cielo. The second was a group of students from a university in Mexico who wanted to give the women's group training on business accounting. Both projects were discussed by the leader and two or three women from the group. The rest of them only listened and agreed with what was said. These discussions allowed me to record data that described how decision-making was done as well as the level of participation of the group members. The second meeting I observed was from the *Associación de Promotores Campesinos*. I did not sit with them, but behind their circle. In this meeting, I was able to record data about how the leaders communicate about the projects developed and the issues that concern their groups. My observations suggested that members have similar levels of participation and talk about the same themes. In both meetings I was only able to listen and make notes in my field notebook. I was unable to participate in any other meeting, because all community meetings are held on the same day of the month.

Data gathered by observation was collected in a field notebook during the day and every night. The field notebook was coded using the same key themes as the interviews.

Mason (1996) suggested that observation is a means to "build explanations through some form of grounded interpretative data analysis" (p. 62). Through observation I identified actions that would explain the actual levels of communication and interaction among the members of the different communities and the process of decision-making within the rural communities. I identified informal leaders and communication process for decision-making. Observation allowed me to validate other data gathered through the interviews. Observation provided the possibility of identifying facts that are often missed in the interviews or by participants. The similarities and differences between interviews and observation data were crucial in the analysis.

Data Analysis

In order to manage the data for the analysis, I transcribed the recorded interviews into text version and later created a list of categories and subcategories that would help the analysis of the data. The themes under which the interviews' information was coded came from the primary themes (as explained in Table 4.1). Once I coded the interviewees' responses with the primary themes, I created segments of data under different WORD documents, each one with a primary theme. Some examples were: 1) Collaboration, 2) Administration, 3) Interest, objectives and goals, and 4) Issues of concern. To obtain more specific data I sub-coded those segments of data with more concrete themes. For example, under the theme of collaboration, I sub-coded with themes such as communication, organization of local groups, participation of local residents, and recognition of local residents in project development. Some of these themes emerged from data obtained through interviews and observation. For example, under the category

of "Issues of concern", I sub-coded with themes such as access to the rural communities, financial resources, management, and conflicts with *fleteros*.

The analysis for this study was developed in Spanish since the data gathered from interviews, observation, and field notes was in Spanish. In order to use information such as quotes from participant I followed the back-translation method which requires information to be translated from Spanish to English by one individual, in this case me; and then back from English to Spanish by another individual[3].

Limitations

This research intended to interview members of all the communities that lie within El Cielo biosphere reserve. However, I was unable to interview from three municipalities (Llera, Jaumave, and Ocampo) due to a lack of transportation and accommodation facilities. Therefore, the results represent only a portion of the stakeholders.

A second limitation was lack of access to secondary literature, (e.g. minutes from meetings, sustainable development plans, recent publications from NGOs regarding their work with the communities, and more), because they were kept within government archives and had restricted access. I was also unable to witness any type of meeting or communication between a government agency and rural communities. The use of secondary literature and observation of these meetings would have helped develop a deeper understanding of the communication processes between these stakeholders. As a woman, I could access communication and trust processes in individual interviews, but

[3] Back-translation method was done by Miriam Esquitin, a Mexican social anthropologist who resides in Canada.

was not allowed to attend meetings attended only by men. As a result of this limitation I could not compare data gathered from interviews to the actual community meetings.

Despite the limitations, this study generated valuable information. These findings provide insight into stakeholders' participation in the development of ecotourism in El Cielo biosphere reserve.

Conclusion

A review of the literature on collaborative management indicated the importance of stakeholders' participation. Qualitative methods were identified as the approach to generate data appropriate to the research questions. The use of semi-standardized interviews, observation, and informal conversations enabled description of collaboration as perceived by participants. The process used to analyze participants' responses identified relevant issues for El Cielo and intended to find those that are not typically present.

CHAPTER 5: RESULTS AND DISCUSSION

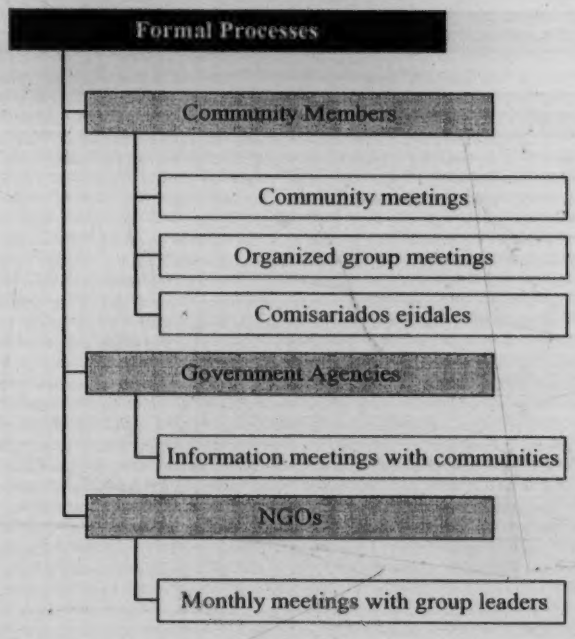
As presented in the first chapter, one of the objectives of the research was to describe the communication and decision-making processes (both formal and informal) among stakeholders. The first section of this chapter presents the data about the different communication and decision-making processes that occur among the stakeholders of El Cielo. The processes vary depending on their level of formality, which is influenced by the nature of the relationship among the participants, their social roles, and the channels used for communication.

The second section presents the analysis of the data. Gray's (1989) model of collaborative management is used to analyze each process. The last section of this chapter includes the components of collaborative management found in this research. These components determine the level of collaborative management in both the formal and informal communication and decision-making processes.

Formal Communication Process and Decision Making

According to Kraut et al. (1990), some of the factors that differentiate a formal from an informal process are: scheduled meetings, arranged participants, a preset agenda, one-way communication, impoverished content, and formal language. People who participate in the formal processes in El Cielo are usually those who have legal titles such as *ejidatarios*, community leaders, municipal presidents, or government agents.

Figure 5.1 Formal Processes in El Cielo



Among Community Members

Most formal processes in rural communities involved members who hold an *ejidatario* title or have decision-making authority, as well as government agents and community leaders. Three different processes of formal communication are presented in this section: 1) community meetings, 2) organized group meetings, and 3) meetings with *comisariados ejidales*.

Community meetings usually included: 1) activities in the community during the previous month; 2) tasks to be accomplished by the community within the following month; 3) future events, such as the arrival of tourists during "spring break," the busiest season of the year; 4) problems that have occurred among *ejidatarios* or among

communities; 5) possible projects that have been proposed to the community leader by the government agencies or NGOs; and 6) designation of training workshops to improve tourism services.

After listening to the description by many community members about the formal communication process in their communities, I realized that all the communities, with the exception of La Gloria, followed a similar pattern:

- Community meetings were held every two months. Date, time, and place were usually the same. In the case of special announcements, emergency meetings were called by canvassing the community.
- Depending on weather, meetings were held either indoors or outdoors. If a community does not have a council house, the meetings were usually held in or around the *comisariados*' house.
- The *comisariado ejidal* informed the *ejidatarios* of the agenda, future events, proposed projects and progress reports. Discussion among *ejidatarios* followed.
- After discussion, decisions were made by consensus and tasks were set forth for the following month.
- If an *ejidatario* or an outsider wanted to communicate with the community, he/she must first approach the *comisariado ejidal*.

From what I was told by a few community members during interviews, *ejidatarios* may or may not inform the rest of the community members about what is discussed in the meetings. In cases where work has to be done in the community, the decision was communicated by word of mouth to the rest of the community. At this point the communication becomes informal.

Organized group meetings included meetings every month, a prepared agenda by the leader, and both one-way and two-way communication. One-way communication happened when the leader informed group members of the agenda, tasks, projects, proposals for future projects, or group issues; two-way communication was open for group members to present their points of view or for discussion. Decisions were made by consensus, and the group leader informed other stakeholders such as government agents, members from other communities, or the representative of *Pro Natura* about group decisions. The community of La Gloria used these meetings as an alternative to formal community meetings. As mentioned in chapter two, this community was mostly inhabited by *posesionarios* who did not hold an *ejidatario* title. The *comisariado ejidal* lived outside of the protected area and as a result the residents of La Gloria did not have a legal representative. The people from La Gloria could not participate as a community in legal processes. Instead, this community had self-organized as *Unidos Venceremos* and created a parallel formal process similar to the official decision-making and communication process of the other three communities. This group chose a leader who could officially represent the people of La Gloria as an organized group to the authorities. However, he or she could not represent the *ejido*.

The third process revolved within the *comisariados ejidales*. This process included legal representatives and aimed to resolve conflict. First, the *ejidatarios* informed the *comisariado ejidal* of a conflict through a community or a private meeting. Second, the *comisariados ejidales* met to reach an agreement and later informed the community or the affected person about the decision. According to participants, a

common example of conflict was the trespassing of cattle and the fares collected in San Jose. When this happened, the landowner informed the *comisariado* and he/she approached the *comisariado* of the other community to solve the conflict and reach an agreement. Once these leaders had come to an agreement they informed their members of the agreement. This type of communication may seem more informal than formal since it revolved around plain conversations, which happened casually or in case of an emergency. However, they are formal, because they included legal representatives dealing mostly with issues or conflicts between communities, they had an arranged agenda, and may or may not have been scheduled in advance. They were also formal because the participants in these conversations had the power to make definitive decisions.

Between Government Agencies and Communities

Three communication and decision-making processes are presented in this section. Each process corresponds to one of the three government agencies that had the most contact with the rural communities of El Cielo: SOPDUE, CONAFOR, and SEMARNAT. The differences between agencies depended mostly on the nature of the project. For example, most of the projects developed by SOPDUE were part of a national agenda. In other words, the projects required development in all or most protected areas as part of a national project. In this case, the government agent visited the community leader and presented the project for approval. Usually, the second step required a SOPDUE agent to talk to the community about the conditions, significance, and benefits to the local stakeholders.

In addition to national projects, SOPDUE provided community residents with support through permit procedures for natural resource use, such as the *palmilla*, and served as liaison between researchers and rural communities for environmental research projects. The communication process that communities or groups followed when they wanted to make use of their natural resources is different than the above. When this happened, the communication process started with a letter and a written proposal taken by a member or a representative of the communities to the government agency. This written material indicated the kind of support that was needed (i.e. financial resources, permits, training, material). If SEMARNAT agreed that the request was sustainable, resources were given to the community or group.

Similar to SOPDUE, CONAFOR worked directly with the rural communities in state-protected areas. CONAFOR agents indicated that not only do they support projects developed by the whole community, but they also consider projects from organized groups, families, or landowners as long as a good project proposal is submitted. CONAFOR first informed the community leader of its aim to support people from that community. It then presented the different ways the agency could support them thorough sustainable development projects and invited them to turn in a proposal. CONAFOR presented ideas on projects that could be developed in the area in case people were not aware of natural resources projects. Tutoring was provided by CONAFOR regarding the viability of the projects and the necessary requirements. When a project was approved, CONAFOR provided sixty percent of the financial resources needed. Once the project was finished, CONAFOR paid the remaining forty percent. After one year, a CONAFOR agent and contact person met with and evaluated the income and benefits of the project.

SEMARNAT's communication process differed from the approaches used by SOPDUE and CONAFOR. Because SEMARNAT is in control of national protected areas and because El Cielo was, at the time of my research, still managed as a state-protected area, most of the involvement of SEMARNAT in El Cielo happened through SOPDUE. As mentioned above, when a community or group required a permit to use their natural resources, SOPDUE helped them through the process of getting the permit. When this happened, it was SEMARNAT who gave the permits, but SOPDUE mediated between the community and the national agency. Also, as mentioned before, most of the projects that SOPDUE developed in El Cielo were part of a national agenda. In most cases SEMARNAT participated with SOPDUE in national projects as the national representative. According to a SEMARNAT agent, there have been cases when SEMARNAT approached the communities directly; when this happened the communication process was similar to SOPDUE's approach.

Some of the similarities between the processes of these three agencies and the communities were:

- Government agent and community leader met to discuss the project.
- After the project was discussed with community members, both government agent and rural community reached an agreement. The agreement indicated what kind of resources the agency would provide and the role of the community in developing the project. They also stipulated how the community would maintain continuity of the project. For example, if the government provided them with resources for constructing a group of cabins for tourists, the community presented

a report after one year and indicated the financial benefit that the cabins brought to the community.

- Both government agent and community leader signed an agreement.
- The government agency provided resources and training if necessary.
- Both government agent and community leader met at the conclusion of the project to talk about the results.
- Ongoing communication happened only if it was requested by the government agency at the time of the agreement.

Between NGOs and Communities

The two NGOs (*Pro Natura* and *Pro Biosfera*) followed different formal communication processes. *Pro Natura* worked mostly with organized groups and their formal communication happened mostly through monthly meetings with the group leaders. Monthly meetings between *Pro Natura* and the leaders took place at La Fe´s restaurant. The meetings were held to discuss future projects for the groups, receive feedback about current projects, assure transparency in financial transactions, and obtain progress. In the case of *Pro Biosfera*, formal communication did not happen as often. They occasionally met with all of the community members and followed a process established by the *comisariado ejidal*. Communication between this NGO and community members was mostly informal and will be discussed further on.

Overall, formal communication is easier to enforce, monitor and improve. A formal communication process is more controlled than informal processes because the agenda is planned and organized. Formal communication is potentially inclusive during

the time that guidelines are being established. If the management of El Cielo wanted to consider creating new policies for communication and decision-making, it would be easier to create a culture that would include community members beyond just the *ejidatarios*. Unfortunately, changing these processes may raise issues with community members who support the current system.

Informal Communication Networks

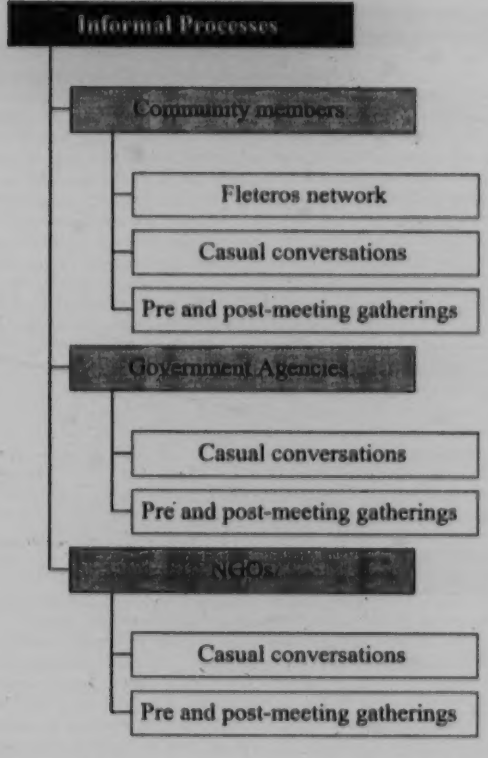
Informal communication processes happen outside a legal framework. In other words, they follow unscheduled meetings, have random participants, follow an unarranged agenda, are interactive, have rich content, and have informal language (Kraut et al., 1990). These networks tend to occur among specific groups of people who have something in common such as friendship, family, jobs, or communities. In some cases legal representatives may participate in informal conversations. When this happens, the nature of the process may be confusing due to the legal role of these participants. Some of the informal communication networks that I identified during my research in El Cielo included *fleteros*, community members (friends and relatives), visitors, and representatives of the two NGOs. These informal networks are described in the following section.

Among Community Members

In contrast to the formal structure, informal communication networks offered members of the communities an opportunity to share and discuss issues of concern, regardless of their gender or legal status. Informal communication networks have always been present in the communities to some degree and were maintained through causal

conversations or through shared personal information. Not everyone in El Cielo had access to the same informal communication networks. These networks revolved around a common interest or relationship, whether it was family, an organized group, or friendship. Three different informal networks were identified among community members: networks created by the *fleteros*, casual conversations, and pre- and post-meeting gatherings.

Figure 5.2 Informal Processes in El Cielo



The *fleteros* network included members of Alta Cima, San Jose, and La Gloria. This group was visible as members traveled through the communities almost every day

during the high tourist season and every other day during the low season. Because they often traveled the ecotourism corridor, they interacted with people from the different communities. Therefore, they became familiar with the news from each community and often passed this information to others. Because of the long distance between communities, *fleteros* were considered a fast and easy way to send a message to another community. Through this passing of information, *fleteros* built relationships in every community of the ecotourism corridor, which gave them a strong role among communities.

Because they had members from different communities and were building relationships all over the ecotourism corridor, the *fleteros* created an association to help regulate the service they provided to the tourists. The *fleteros* sought a way to maintain equal benefits for the members of all three communities (Alta Cima, San Jose, and La Gloria).

> *"Ya despues de hablar con varios de los transportistas pues y de darnos cuenta de que esto es mas competencia que beneficio y pues ya platicando decidimos en regalmentar un grupo de transportistas y asi poder regular el servicion entre todos y legalizarlo"*. After talking with various transporters we noticed that this [their transportation service] is more of a competition than a benefit. And we decided to create a group of transporters in order to regulate all of our service and legalize it. (Mariano G. Male, *fletero* from San Jose, personal communication, February 2005).

Casual conversations created a second informal network . These were conversations that occurred at home, mostly between husband and wife or between family members during supper. I was able to participate in at least four family conversations in which the happenings of the community were discussed. All of the conversations included more than two family members. Three of them took place in the kitchen over supper. One conversation was with the family that owned the tourists' cabins. Another family I spoke with has a son who is a *fletero* and another family member who is part of the committee that is charging entry fees to the *ejido*. A family I spoke with from Joya de Manantiales provides food service to the tourists. The fourth conversation happened outside the house where I camped while the father, two sons (one of them a *fletero*) and I were waiting for a group of tourists to have lunch with us. I was able to hear about decisions made by the community regarding the entrance tolls in San Jose and Alta Cima, project development such as the tourist cabins, and problems with other communities. During these conversations people also talked about other family members, about the tourists, and about coming events in the community.

Even though the *ejido*'s decision-making was done by the *ejidatarios*, community members knew about decisions through informal communication. At least five women from the community of Alta Cima mentioned that they do not attend the community meetings but that they are kept informed by their husbands.

> *"Solo los maridos van a las juntas pero pues casi todo lo que digan en la junta nos cuentan y asi es que nos mantenemos informadas de lo que pasa. Ademas hay veces en las que nosotros aqui platicamos y les*

ayudamos a hacer algunas decisiones." Only the husbands go to the communities' meetings, but they tell us almost everything they say at the meeting. So we are kept informed of what is happening. Also, there are times when we talked here [home], and we helped make some decisions. (M. Orozco, female from Alta Cima, 2005)

In addition to serving as an alternative medium of information, this informal communication network can also offer participants a perceived sense of ownership or control over their environment (Young, 1998) and address the need to participate in community meetings.

A third informal communication network was the pre- and post-meeting gatherings. A *comisariado ejidal* stated that prior to and after a community meeting, official leaders and strong participants gathered to talk about the main ideas discussed at the community meetings and the decisions to be made.

"Normalmente nos reunimos los del comite antes de las juntas ejidales y a veces tambien vienen algunos otros miembros de la comunidad. Y pues cuando nos juntamos platicamos de lo que se dijo la junta pasada y de que es lo que se tiene que decidir en la nueva." Usually, the committee meets before the meetings and sometimes other community members (meet?) and when we gather together we talk about what was said in the last meeting and the agenda for the next meeting. (J. Jimenez, comisario ejidal, Alta Cima, 2005).

During these gatherings participants shared what they heard or discussed with other people and prepared themselves for the meeting. Pre- and post-meeting gatherings allow discussion that cannot occur in front of a group of people and allows participation of people who can not attend meetings because of gender, age, or role in the community.

Another type of gathering happened before the monthly meeting with the representative of *Pro Natura* and the leaders of the organized groups. Prior to this meeting the representative of *Pro Natura* met with the leader of the women's group "La Fe", the leader of the male group " El Pino", and the president of the *Association de Promotores Campesinos*. During this gathering the group leaders informed the representative of *Pro Natura* of the happenings in the communities and the groups as well as the issues and topics for the agenda. This gathering was more informational than decision-making.

Although most of the group gatherings were formal, they tended to become informal once the agenda was covered. I was able to observe that once the formal meeting was over, people stayed around and conversed about their personal lives, the community, the visitors, projects, and so forth. For example, during the group meetings of La Fe, women started embroidering while the group leader and the treasurer spoke to them. Then they discussed issues on the agenda. Once they reached the conclusion of the formal meeting, they started talking about their personal lives, the visitors, their businesses, and community projects. During this time anyone was welcome to stay and keep embroidering with the rest of the women or leave and return home. These informal conversations allowed women to look forward to these meetings as a time to socialize and work while possibly building stronger relationships among the women of the group.

Overall, informal processes are beneficial because it is easier to move away from some of the legalities of the formal processes. Informal communication is also an alternative when participation is limited to a certain number or type of participant. Informal processes may be helpful in creating a more sincere community environment and finding ways in which formal communication process can be improved. Formal communication is most popular within the culture of government agencies. However, informal communication would help agencies develop relationships with community members before trying to work with them.

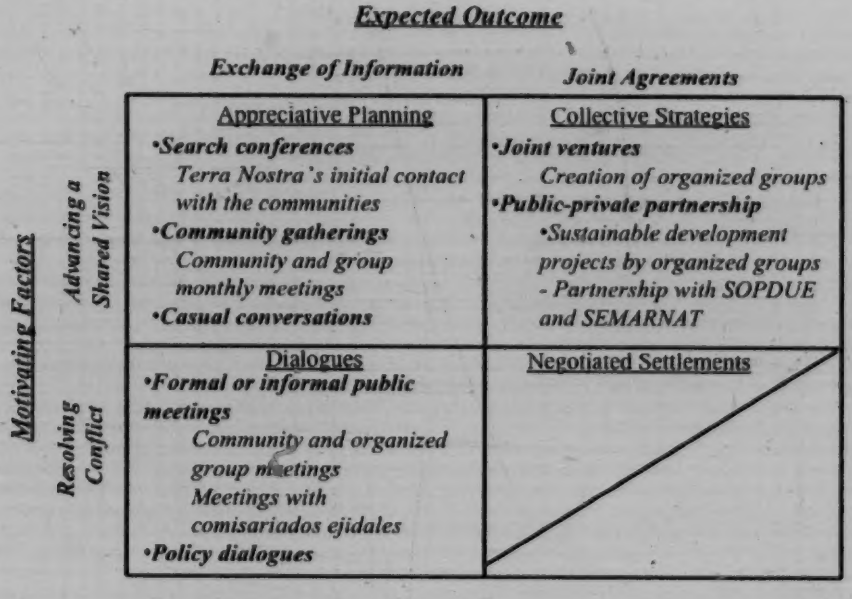
Discussion of Gray's Model

This section classifies the communication and decision-making processes from El Cielo into four different designs of collaboration presented by Gray (1989). According to the author, two dimensions characterized the problems for which collaboration represented a constructive alternative: the factors motivating the parties to collaborate and the type of outcome expected of such collaboration. For example, a motivation for stakeholders to collaborate could be a desire to advance a shared vision or to solve a conflict.

Expected outcomes may include the creation of a joint agreement, an association, or exchange of information. Four designs of collaboration were presented in Figure 5.3: Appreciative planning, collective strategies, dialogues, and negotiated settlements. The first two were designs for advance-shared vision. The second two were designs for resolving conflict.

The following section gives a brief description of each collaboration design along with the communication and decision-making processes from El Cielo that fit into each category as illustrated in Figure 5.3. Some processes may fit into two designs of collaboration depending on the outcome and the situation for which they were generated.

Figure 5.3 Identified Designs for Collaboration (Gray, 1989)



Appreciative planning and collective strategies are collaboration styles motivated by a shared vision. Collaboration occurs when stakeholders recognize a common problem or share a vision for new projects or changes. Initiatives require more than just involving the private sector. In the case of El Cielo community members, it requires building new relationships across the sectors, for example government agencies, environmental organizations, NGOs, or community groups from different protected areas (London, 1996).

Appreciative Planning

According to Gray (1989), appreciative planning allowed stakeholders to inquire and discuss a problem without necessarily reaching any actions. This approach was merely exploratory and analytical, and encouraged stakeholders to look deeper into the problems and interdependent forces that give rise to it. This phase may be used for articulating information and finding common goals and values that affect the problem discussed. Once the problem has been discussed, stakeholders may want to move on to new initiatives in the desired direction. This approach would lead to proposals for collective strategies. Gray cited search conferences and community gatherings as examples of appreciative planning.

Search conferences

Search conferences combined stakeholders' participation and long-range goal setting. Participants analyzed issues or concerns, developed alternative scenarios for the future, and establish recommendations and goals for the community (London, 1996). *Terra Nostra*'s initial contact with the communities of El Cielo was an example of search conferences.

When El Cielo was declared a protected area in 1986, *Terra Nostra* visited the rural communities to provide information about protected areas and sustainable development. After four years of working with the communities, providing workshops and information sessions, a number of members from different communities shared a vision of conservation and economic growth through sustainable activities. As a result, the *Asociacion de Promotores Campesinos* was created. Together *Terra Nostra* and community members developed long-term goals that led to the recruitment of community

members for the creation of the organized groups (Manuel Denoseque, representative of Pro Natura, personal communication, 2005).

Community Gatherings

Appreciative planning also takes place in gatherings that are often inspired by a local group or individual. They start with a specific purpose and expand to a larger agenda, because of the need to discuss topics that concern all participants (London, 1996).

Monthly Meetings: Community and group monthly meetings can easily be placed in this category. During monthly meetings members convened for monthly check-in and share new information. Further discussion happened when the community or group was facing a problem that members needed to address. For example, when the community of San Jose was highly concerned about tourists damaging their land and the natural resources, they used the monthly meetings to address this issue. After several meetings, a committee was established to charge a toll for all tourists and *fleteros* that entered the community (Pedro Manzanarez, male *ejidatario* and *fletero* from San Jose, personal communication, 2005). Unfortunately, collaboration in this case did not extend to other communities or public organizations; therefore, the decision to charge an entrance fee in San Jose created a conflict in the protected area.

Casual Conversations

Some examples of informal communication, such as casual conversations among friends and family and pre-meeting gatherings, fit into the category of appreciative

planning. During these conversations participants shared their ideas and concerns without having authority to reach official agreements. Through casual conversations community members shared information and discussed decisions that needed to be made. Long-term goals may emerge from these causal conversations and can be discussed further in formal meetings.

Collective Strategies

Collective strategies were also motivated by a shared vision and often emerged from appreciative planning. They moved beyond appreciative planning by generating a specific course of action to address the problem or to carry out the vision (Gray, 1989; London, 1996). Collective strategies usually resulted in the formation of groups or organizations that specifically addressed the problem. Gray gave four examples of collective strategies in her book *Collaborating* (1989): public-private partnership, joint ventures, R&D consortia, and labor-management cooperatives. Because this research focused on collaboration among the stakeholders of a protected area I focused mainly on the joint ventures and public-private partnership, or as London (1996) called it, the social partnership.

Joint Ventures

I considered the creation of organized groups a joint venture. They are a result of the appreciative planning between Terra Nostra and the rural communities where local residents decided to take an extra step and join a group according to the economic activities they wished to pursue. Some of these groups were created with residents from

different communities, such as the Guia de Aves, and others are either gender-specific or mixed. Such groups work toward a common goal identified in their appreciative planning stages and then acted upon it.

Social Partnership

Social partnerships, especially the public-private type, happened between business leaders and tended to expand to non-profit and public sector organizations. In these partnerships stakeholders organized and enlisted other community members or groups in a cause in which have some stake (London, 1996).

Development of Sustainable Projects by Organized Groups: Rural communities were educated in sustainable development by *Terra Nostra*, group leaders and the representative of *Terra Nostra* took initiative to create a partnership with SOPDUE. This partnership contributed to training and financial resources for the development of sustainable projects. This initiative built a connection between the government agencies and rural communities and helped in the transition of rural communities becoming protected areas. The representative of *Pro Natura* (the former representative of *Terra Nostra*) mentioned that this partnership resulted in a positive relationship among the organized group members and the government agency and was maintained for a few years. This relationship has decreased due to the lack of contact between the government agencies and the communities. The change of state government that occurs every four years was a probable factor that led fewer visits from government agents to the rural communities.

Dialogues and negotiated settlements were collaboration styles that emerged out of the need to resolve multiparty conflicts. Depending on the desired outcome, these collaboration styles were organized so that stakeholders from different areas could meet and exchange information and/or reach agreements about conflicts.

Dialogues

Dialogues allowed for clarification on issues at stake in a dispute among various stakeholders. The desired outcome of this type of collaboration was mostly to inform, express emotions, and share concerns among all participants and to find a way to work toward a solution. Participants did not always agree and they were limited to merely recommending action, which limits the usefulness of dialogues. Gray described two ways in which dialogues can happen: formal or informal public meetings and as policy dialogues (Gray, 1989).

Meetings Among *Comisariados Ejidales:* As mentioned before, *comisariados ejidales* usually met when there was a conflict between members of different communities that must be addressed by a third party (the community leader). *Comisariados ejidales* expressed that the purpose of the meeting was to give both parties the opportunity to discuss the problem and to get a shared understanding of the main issues. Once the problem was discussed, participants tried to agree on solutions. Unfortunately, I did not ask further questions on this process so that I could provide a more detailed description or an example.

Public Meetings: Dialogues were usually present in most of the community meetings and between community members and government agents. These meetings were

characterized by the exchange of information, not necessarily the resolution of conflicts (London, 1996). According to *ejidatarios* and *comisariados ejidales*, community meetings were held mostly to provide information and sometimes to advance negotiations or agreements. Meetings with government agents were called to inform the community members of a plan or project proposed by that agency.

Negotiated Settlements

Unlike dialogues, negotiated settlements attempted to reach a joint agreement among the disputants (Gray, 1989). This type of collaboration was usually used to alleviate problems in rule-making processes among different parties. It encouraged participants to share their interests and concerns, which were usually distorted by intermediaries. Unlike dialogue participants, parties to a negotiated settlement were authorized to reach an agreement and decided on specific courses of action. Gray (1989) described three types of negotiated settlements: site-specific, disputes, negotiated rule-making, and mini-trials. Site-specific disputes usually involved environmental and development disputes which "have the potential of being resolved through collaborative approaches" (London, 1996, p. 7).

Unfortunately during my stay in El Cielo no negotiated settlements occurred, and therefore I did not collect data that related to this approach to resolving conflict.

CHAPTER 6: CONCLUSIONS

I looked for key elements that would help determine if collaboration existed in the protected area by exploring the existing communication and decision-making processes in El Cielo. I used several research strategies such as standardized interviews, observation, and casual conversations. These research tools allowed me to gather data specific to the area that is not easily found in literature and that describe the stakeholders' means and methods of communication. After analyzing the data I was able to describe different communication and decision-making processes as well as who is allowed to participate in each process. For the presentation of results, the processes were divided into formal and informal, according to the guidelines given by Kraut et. al. (1990), and subsequently divided according to the types of stakeholders involved in each process. Guidelines for identifying stakeholders were obtained from Borrini-Feyerabend (2000). His article "Collaborative management of protected areas: Tailoring the approach to the context" described twenty-four potential stakeholders.

Formal processes occurred 1) among community members, 2) between NGOs and community members, and 3) between government agencies and community members. I identified six types of formal processes. These processes were very structured and organized, and most of them followed the same procedures. Participants were usually people with legal titles such as *ejidatarios*, community leaders, municipal presidents, and government agents. Thus, the processes did not tend to be flexible with people who did not hola a legal title. For example, only male *ejidatarios* can participate in community meetings, excluding women *ejidatarios*, *avecindados*, and *posesionarios*.

Informal communication is a long-standing and common practice in rural communities. I identified three different types of informal processes: 1) local networks, 2) casual conversations, and 3) pre- and post-meeting gatherings. These processes allowed different types of stakeholders to participate in decision-making without having a legal title. Informal processes of collaboration in El Cielo led to a rise in inclusiveness and a decrease of legalities; it fostered the relationships necessary for working on an agreement; it created an open space for people to freely express concerns; and it raised awareness of stakeholder ideals and customs. Difficulties in using informal processes for collaboration in El Cielo included: the challenge of controlling and/or monitoring meetings or other means of communication; informal processes cannot be officially used for legal purposes; and government agencies would need to change their institutional culture to create relationships with local communities.

After analyzing all formal and informal processes, I followed Gray's (1989) designs of collaboration to identify processes that demonstrated collaboration in El Cielo. I found that collaboration was present in the forms of appreciative planning, collective strategies, and dialogues. Appreciative planning and dialogues were mostly used by 1) *Terra Nostra* in its initial contact with the rural communities; 2) community and group monthly meetings; and 3) casual conversations. Collective strategies included the creation of organized groups, and the public-private partnership between rural communities, NGOs, and SOPDUE, created for the development of interpretative trails and other tourism projects. Dialogues were found in the form of community and organized group meetings and meetings with *comisariados ejidales*.

Since the majority of the processes fit into the appreciative planning and dialogue categories, stakeholders demonstrated a desire for collaboration and seemed to understand the need to communicate among themselves to solve conflicts. However, this research found only two examples of processes that actually led to a joint agreement and a shared goal. These contextual factors may be absent for collaboration connected to joint agreements within the ecotourism corridor communities. Other elements may be lacking in El Cielo and are deemed important for the development of collaboration in North American western communities, such elements are explicit and voluntary membership (Roberts and Bradley, 1991) rather than legal status, gender and age.

Limitations of the Research

Certain limitations in the present study must be taken into account when considering the study and its contributions. First of all, the findings cannot be directly generalized to the larger population of El Cielo because interviews with local residents took place only in one of the four *ejidos* and only a small percent of the population was interviewed. Also, I found it difficult to access a diverse sample of government agents which decreased the opportunity to triangulate some of the information given by local communities. Another limitation was the difficulty in accessing secondary literature such as the minutes from meetings with local residents and government agencies. Given the scope of this research, documents from government agencies are needed. Gender was also a limitation in this research, because as a woman I was unable to participate in the community meetings, which are usually attended by male only. Few of the elder men from the communities even speak to women from outside the communities which made it difficult to build relationships.

Benefits of the Research

This research provided detailed information on the various levels of communication and decision-making in these four communities. It added an example to the literature on collaborative management as well as social and legal aspects that affect decision-making processes. As well, this research illustrated how local residents who are affected by legalities sought ways to work around formally established processes. The various examples of informal communication processes presented in this research pointed to the importance of studying these processes as a fundamental element of collaborative management. It generated questions around effects of culture and gender in these processes and the need to address cultural traditions for the benefit of collaboration.

This research also recognized that protected areas are not solely about protecting natural resources but also about sustainable development and collaboration among local stakeholders. Finally, this research added one more case to the literature on collaborative management and communication in rural communities as well as in protected areas in Latin America.

Recommendations for Future Research

This research covered a great variety of topics that could be broken down for more specific research. These include: informal communication processes in rural communities, the effect of legal frameworks in the decision-making processes of rural communities, alternatives for legal decision-making processes, the relationship between

government agencies and rural communities, the role of women in decision-making processes, and collaborative management in organized groups.

Recommended Questions for Future Research

This research has raised questions that can contribute significantly to the literature of collaborative management. Future researchers might explore why collaboration processes in this instance stopped at the stages of information sharing rather than following through to joint agreement. They might also explore the best approaches for government agencies who wish to collaborate with rural communities.

Conclusion

In the end, my research focused on the processes of the local people. The research strategies allowed me to understand how they work together, their willingness to collaborate, the existing elements that affect collaboration, and the usefulness of the different communication and decision-making processes. Although the existing legalities in El Cielo represent a barrier to inclusiveness and decision-making, the diversity of processes that exist in El Cielo allowed different types of local stakeholders to participate and feel included. Local stakeholders demonstrated an understanding and openness for communication, vision sharing, and discussion of concerns.

The Asociacion de Promotores Campesinos, *fleteros*, and *guias de aves* were examples of collaboration that led to some joint venture through collaboration. These examples provide evidence of the potential for collaboration in the ecotourism corridor. However, collaboration with non-local stakeholders needs some research and practical solutions in order to build on this latent potential.

APPENDIX III: LETTER OF INFORMATION

Dear (Name of individual),

My name is Karla Pricila Barron Cantu, I am a M.A. student at the University of Alberta and I would like to extend you an invitation to participate in the research "Collaboration in Ecotourism Management: A Model for a Sustainable Ecotourism Development in El Cielo Biosphere Reserve, Tamaulipas, Mexico." The purpose of this research is to describe key issues relevant to ecotourism management of the El Cielo biosphere reserve, identify key stakeholders and their issues of concern, and indicate benefits and costs of implementing a collaborative management strategy. This research is part of my graduation requirement for my M.A. in Physical Education and Recreation of the University of Alberta.

This research tries to interview key people that are somehow connected and/or with the management and development of the ecotourism in El Cielo Biosphere Reserve. You have been selected because of your professional, business, or particular involvement in the ecotourism activity of this biosphere reserve. The results of this research may allow all the people interested to know what the actual situation and concerns in regards to the ecotourism development of El Cielo Biosphere Reserve, as well as how to better involve all people necessary to ensure benefits and improve the ecotourism management in the biosphere reserve.

If you decide to participate, the interview will take approximately an hour and a half and will be scheduled at a time and location of your choice. I would like to tape the interview with your permission. If not, I will simply take notes. By informing the interviewer you are free to withdraw the interview at any time. There is no risk associated with participating in the research. Your answers as well as your name will be kept confidential. To ensure confidentiality, data obtained from this research will be kept in a locked drawer where only the researcher would have access. Information is normally kept for a five-year period post-publication, after which it will be destroyed. If you decide to withdraw, your information will be removed from the study upon your request.

If you have concerns about this study, you may contact my advisor, Karen Fox at (780) 492-7173 or Dr. Brian Maraj, Chair of the Faculty Ethics Committee at (780) 492-5910 at the Faculty of Physical Education and Recreation at the University of Alberta. Dr. Maraj has no direct involvement with this project.

Thank you for your time.

Karla Pricila Barron Cantú
M. A. Candidate Physical Education and Recreation
University of Alberta

APPENDIX IV: LETTER OF INFORMATION (SPANISH)

Estimado (Nombre del individuo),

Mi nombre es Karla Pricila Barron Cantu, estudiante de maestría de la Universidad de Alberta en Canadá. Quisiera extenderle un cordial saludo y solicitar su participación en el estudio de investigación "Colaboración en el Manejo del Ecoturismo: Un Modelo Para el Desarrollo Sustentable de La Reserva de la Biosfera El Cielo, Tamaulipas México". El propósito principal de esta investigación es la realización de tesis para la obtención del titulo de Master de Artes en el área de Educación Física y Recreación de la Universidad de Alberta.

Para la realización de esta investigación se entrevistará a personas clave que de alguna manera están involucrados en el manejo y desarrollo del ecoturismo en La Reserva de la Biosfera El Cielo. Los resultados de esta investigación darán información acerca de la situación y preocupaciones actuales acerca del ecoturismo en la biosfera, así como promoverá la participación de comunidades locales y demás interesados para asegurar beneficios y facilitar el manejo del ecoturismo en El Cielo.

La entrevista tendrá una duración aproximada de de una hora y media y se llevará acabo en el lugar, hora y fecha que usted indique. Si usted lo permite, la entrevista será grabada en casete, de lo contrario se tomarán notas en un cuaderno. Favor de informar al entrevistador si desea renunciar a la entrevista. Cabe aclarar que este estudio no presenta riesgo alguno para los participantes, en caso de que algún tipo de riesgo ya sea legal, físico o psicológico sean identificados será informado manera inmediata. Para asegurar la confidencialidad de esta investigación la información obtenida será guardada bajo llave y de la cual únicamente el investigador tendrá acceso. Dicha información estará bajo mi posesión durante un periodo de cinco años posteriores a la publicación, después de la cual serán destruidos todos los archivos. También cabe hacer la aclaración de que usted tiene todo el derecho de mantenerse en el anonimato durante las entrevistas. En caso de que decida renunciar a la entrevista la información obtenida de su parte será anulada.

Si usted tiene alguna duda o comentario acerca de esta investigación se podrá dirigir a las siguientes personas: Mi supervisora, la Dr. Karen Fox al (780) 492-7173 o con el Dr. Brian Maraj, Director del Comité de Ética de la Facultad de Educación Física y Recreación de la Universidad de Alberta al (780) 492-5910. Cabe mencionar que el Dr. Maraj no está directamente involucrado en este proyecto.

Atentamente

Lic. Karla Priscila Barrón Cantú
Pasante de la maestría en Educación Física y Recreación
Universidad de Alberta

APPENDIX V: INTERVIEW GUIDE FOR THE LOCAL RESIDENTS

I. IDENTIFICATION

1. Interview number
2. Date
3. Place
4. Time
5. Tape Number

II. GENERAL INFORMATION

1. Name of the person
2. Age
3. Status in the ejido
4. Business or activity he/she practices

III. ABOUT THE PERSON

1. What is the ejido or place or origin? (If he/she is from this same ejido, skip to question 5)
2. How did you get to this ejido?
3. How long have you being here?
4. Have you had any problems for being from other ejido? What kind of problems? Haw have you overcome them?

5. What other economic activities do you practice?
6. Why did you decide you decided to have this business?
7. Which activity do you think gives you more money?
8. Since when have you have doing this activities/business?
9. Are you a part of an organized group? (those that get together to work as a team in an activity)
10. Are you not interested in working with a group? Why?
11. What do you think of the organized groups?

IV. ABOUT PARTICIPATION

12. Do you attend to the ejido's reunions?
13. What issues are discussed in those reunions?
14. How are decisions taken in the reunions?
15. Do you think that everybody in this community have the same advantages and disadvantages?
16. How would you describe the communication between the members of this ejido?
17. What are the usual problems that happen in this ejido?
18. How do you think they can be avoided?

V. TOURISM

19. Do tourists use your services? Could you please describe them for me?
20. When is the highest season?
21. How do you think tourism has benefited your community? (Money, services such as hot water, road improvement, etc.)
22. When did the government give you the solar cells?
23. Since when do you have hot water?
24. Do you think that tourism has something to do with having those services?
25. What problems have surged from tourism?
26. Do you think you host enough tourism? Or would you like to get more?
27. How do you think tourism has influenced your community? (More business, change of clothing, change of ideas, more interest for learning, etc.)
28. Do you think tourism benefits equally all communities? How so?
29. What do you think is the difference between tourism and ecotourism?

VI. ABOUT THE PLACE

30. What is your opinion about this community? What do you like and dislike about it?
31. What do you think of the other ejidos?
32. What problems are common between communities?

33. Do you think of anything important that I did not ask about and that you would like to tell me about?
34. How did you feel throughout the interview?
35. Do you think I asked thing I should not have asked? Why?
36. Is there anything in particular of what you told me that you would like to keep confidential?
37. In case of needed, would you be willing to give me another interview?

APPENDIX VI: INTERVIEW GUIDE FOR THE ORGANIZED GROUPS LEADERS

I. IDENTIFICATION

6. Interview number
7. Date
8. Place
9. Time
10. Tape Number

II. GENERAL INFORMATION

5. Name of the leader
6. Organized group
7. Ejido that hosts the group

III. ABOUT THE LIDER

38. What is the ejido or place or origin? (If he/she is from this same ejido, skip to question 5)
39. How did you get to this ejido?
40. How long have you being here?
41. Have you had any problems for being from other ejido? What kind of problems? Haw have you overcome them?

42. What other economic activities do you practice?
43. Which activity do you think gives you more money?
44. Since when have you practiced such activities?
45. Why did you want to be the leader of this group?
46. What benefits do you perceive from participating in this group? (More work, working in teams, more money, learning something new, etc.)

IV. ABOUT THE ORGANIZED GROUP

HISTORY

47. How and why did the group started?
48. Who was an influence for the creation of this group?
49. What necessities does this group try to reach?
50. How many people started this group?
51. How many members are now?
52. Why do you think they have increased/decreased?
53. About what range of age are the members of the group¡
54. What are the principal objectives of the group?
55. Have the group reached its objectives? How so?

56. Have the objectives changed from the original ones?
57. What has being the contribution of the members/organizers of this group? (Economic contribution, construction, tools, transportation, workshops, etc.)

INNER STRUCTURE

58. What are the principal activities of the group?
59. What are the different tasks in the group?
60. Who does what?
61. Do you think there is a good or bad communication in the group?
62. Have you have any decision making problems?
63. How are the final decisions taken?
64. Who is allowed to participate in the decision making process?
65. How is the direction committee chosen?
66. How is a new member integrated into the group?
67. Every when do you have reunions?
68. What are the most frequent issues in the reunions? (Please tell me how the meetings normally are)
69. What are some of the problems more frequent in the group?
70. How do you think they can be solved?
71. What do you thing are the benefits that this group generate? (Community benefits, more money for the members, more tourism, etc.)
72. What would you like to improve in this group? Why?
73. How would you say an ideal organization would be for the group?
74. What other groups do you think can benefit this community?

COLLABORATION

75. What other organizations or government agencies have supported this group?
76. How have they supported it?
77. Have you worked with other groups from this ejido?
78. Do you think all members have successfully developed their tasks?
79. What benefits do you think can surge from working with other communities?
80. How good would you say that is your communication with the other communities?
81. Have you had any kind of problems with government agencies or institutions? In developing your activities?
82. What kind of problems?
83. How have you overcome them?
84. How do you think government or institutions can help improve the tourism development in your area?
85. What would you like to improve in the tourism development of your area?
86. Do you think your community share the same thought?
87. Who in this community do you think would support this change?
88. Has the community being benefited in any way by your group? If so, how?
89. Do you think the community accepts this group and support it in its activities? How so?

TOURISM

90. What type of tourism uses your services? Could you please describe them for me?
91. When is the highest season?
92. How do you think tourism has benefited your community? (Money, services such as hot water, road improvement, etc.)
93. When did the government give you the solar cells?
94. Since when do you have hot water?
95. Do you think that tourism has something to do with having those services?
96. What problems have surged from tourism?
97. Do you think you host enough tourism? Or would you like to get more?
98. How do you think tourism has influenced your community? (More business, change of clothing, change of ideas, more interest for learning, etc.)
99. Do you think tourism benefits equally all communities? How so?
100. What do you think is the difference between tourism and ecotourism?

101. Do you think of anything important that I did not ask about and that you would like to tell me about?
102. How did you feel throughout the interview?
103. Do you think I asked thing I should not have asked? Why?
104. Is there anything in particular of what you told me that you would like to keep confidential?
105. In case of needed, would you be willing to give me another interview?

APPENDIX VII: INTERVIEW GUIDE FOR THE COMISARIADOS EJIDALES

I. IDENTIFICATION

11. Interview number
12. Date
13. Place
14. Time
15. Tape Number

II. GENERAL INFORMATION

1. Name of the Comisariado
2. Ejido
3. Time of leadership

III. ABOUT THE COMISARIADO EJIDAL

1. What are your tasks as comisariado ejidal?
2. How do you achieve tour tasks?
3. What is needed to be a comisariado ejidal?
4. Can you please tell me how does the asamblea work?
5. Who chooses the members of the asamblea and how?
6. What other economic activities do you practice?
7. What did you used to do before becoming the comisariado ejidal?

IV. TASKS AND REUNIONS OF THE ASAMBLEA

8. What are the tasks of the other members of the asamblea?
9. Every when are the reunions of the asamblea?
10. Where are the reunions held?
11. Who assists to the reunions?
12. What are the main issues that are discussed in the reunions? (Please tell me how are they usually run)
13. Please tell how are the final decisions taken
14. How do you inform to the rest of the community about the decisions taken?
15. How do you take into account the point of view or opinions of the rest of the community?
16. How important do you think is to listen to what the rest of the community have to say about the decisions taken?
17. How can the *avecindados* present their issues of concern, ideas, and opinions about projects or thinks to do?
18. How do you inform to the ejidatarios the date, time, and place of the reunions?
19. How are you informed about projects from the government or other institutions?
20. How often do you deal with tourism issues in your reunions?
21. What are the issues you talk about tourism?
22. How do you decide who participates in the community projects?

V. ABOUT THE COMMUNITY

23. How many families are in this ejido?
24. What is the principal source of income in this community?
25. How many businesses are in this community? Which ones?
26. How would you describe me this community? (united, hard working, indifferent, etc.)
27. What do you think about the other ejidos?
28. What kinds of problems are common between ejidos?

VI. ABOUT COLLABORATION

29. How united would you say this community is? Why?
30. Have all the community worked together in any project?
31. How has the community benefited from projects like this? (economic benefit, more united, infrastructure, education, better services, etc.)
32. How would you say is your communication with other communities?
33. Have you worked on projects with other communities? Please tell me about the projects and who participated
34. What benefits do you think can be obtained by working with other groups or other communities?
35. How good would you say is your communication with government agencies, NGOs or other institutions?
36. Have you had any problems with government agencies, NGOs or institutions?
37. What kind of problems?
38. How have they being solved?
39. How do you think that government or other institutions can support for a better development of your community?
40. Do you think that all the people in this community share the same vision of tourism?

VII. ABOUT TOURISM

41. What do you think about tourism? (As the comisariado ejidal)
42. Do you think that tourism has benefited your community?
43. Do you think that the services of hot water, light and road maintenance have anything to do with the development of tourism? Why?
44. What else do you think can be done in this community to obtain more benefits from tourism? (More trails, fix the existing trails, new services, hotels, touris, new attractions, etc.)
45. What kind of problems have you had in this community because of tourism?
46. How have you tried to solve them?
47. How do you think they can be avoided?
48. Are there any organized groups in this ejido? Which ones? And what do they do? (if the answer is no, skip to the question 48)
49. Do you think that these groups present a benefit to the community? How so?
50. What do you think about these groups?

51. Is there any community policy that applies to the tourists?

52. How you do usually handled problems with tourism?
53. How does the community provide information to the tourism about the services that you offer and the costs?
54. What do you think the tourism must know about this community?
55. What would you improve in this community for a better development of tourism? (Cabins, policy, tourism control, more economic generation, etc.)
56. What do you think is the difference between tourism and ecotourism?
57. Has ecotourism in some way inspired you to conserve nature? Why?
58. How do you protect biodiversity in your community?

59. Do you think of anything important that I did not ask about and that you would like to tell me about?
60. How did you feel throughout the interview?
61. Do you think I asked thing I should not have asked? Why?
62. Is there anything in particular of what you told me that you would like to keep confidential?
63. In case of needed, would you be willing to give me another interview?

APPENDIX VIII: INTERVIEW GUIDE FOR THE MUNICIPAL PRESIDENTS

I. IDENTIFICATION

16. Interview number
17. Date
18. Place
19. Time
20. Tape Number

II. GENERAL INFORMATION

1. Name of the Municipal President
2. Name of the Municipality
3. Time of his/her position

III. FOR THE MUNICIPALITY

1. What does the El Cielo biosphere reserve represent for your municipality?
2. How is your municipality affected by the activities that take place in El Cielo? (tour guides, cabins, restaurants, events such as the spring event, conservation activities, etc.)
3. Is there any community in this municipality that is benefited by the biosphere reserve? (Exploitation of natural resources, tourism, palmilla, etc.)
4. What tourism activities are developed in this municipality?
5. Where exactly do these activities take place?

IV. ADMINISTRATIVE COUNCIL

6. What are the functions of the El Cielo biosphere reserve administrative council?
7. What are your tasks in the council?
8. Every when are the reunions held? And where?
9. What are the issues that you normally deal with in the reunions?
10. Do all members attend always to the reunions?
11. Could you please tell me how are the decisions taken in the reunions? How are votes taken into account?
12. Do you believe there is a balance between the decisions of the local communities, the government agencies and the institutions such as the UAT?
13. Is there something you would like to change about the functions and reunions of the administrative council? What and Why?
14. How would you describe the communication between all the members of the committee?
15. Do you think the reunions are really necessary? Why?
16. Do you think that the reunions are enough for the management and decision taking about projects or activities in El Cielo? Why?

17. Do you think of anything important that I did not ask about and that you would like to tell me about?
18. How did you feel throughout the interview?
19. Do you think I asked thing I should not have asked? Why?
20. Is there anything in particular of what you told me that you would like to keep confidential?
21. In case of needed, would you be willing to give me another interview?

APPENDIX IX: CONSENT TEMPLATE

Title of the Project: Collaboration in Ecotourism Management: A Model for a Sustainable Ecotourism Development in El Cielo Biosphere Reserve, Tamaulipas, Mexico

Principal Investigator: Karla Pricila Barrón Cantú, University of Alberta

Please fill out this part:

Do you understand that you have been asked to be in a research study?	Yes	No
Have you read and received a copy of the attached Information Sheet	Yes	No
Do you understand the benefits and risks involved in taking part in this research study?	Yes	No
Have you had an opportunity to ask questions and discuss this study?	Yes	No
Do you understand that you are free to refuse to participate, or to withdraw from the study at any time, without consequence, and that your information will be withdrawn at your request?	Yes	No
Has the issue of confidentiality been explained to you? Do you understand who will have access to your information?	Yes	No

This study was explained to me by: _____

I agree to take part in this study:

_____ _____ _____

Signature of Research Participant | Date | Witness

_____ _____

Printed Name | Printed Name

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.

_____ _____

Signature of Investigator or Designee | Date

APPENDIX X: CONSENT TEMPLATE (SPANISH)

Titulo del Proyecto: Colaboración en el Manejo del Ecoturismo: Un Modelo Para el Desarrollo Sustentable de La Reserva de la Biosfera El Cielo, Tamaulipas México

Investigador Principal: Lic. Karla Pricila Barrón Cantú, Universidad de Alberta.

Por favor conteste lo siguiente:

Entiende usted que le ha sido solicitado participar en esta investigación?	Si	No
Ha usted recibido y leído la hoja correspondiente a la información de esta investigación?	Si	No
Tiene entendido de los posibles beneficios y riesgos de esta investigación?	Si	No
Ha tenido usted la oportunidad de preguntar y discutir acerca de esta investigación?	Si	No
Tiene usted entendido que es libre de participar o renunciar a esta investigación en cualquier momento ni consecuencia alguna, y su información puede ser borrada si usted lo desea?	Si	No
Le han explicado la confidencialidad de la información obtenida? Tiene entendido quien tendrá acceso a esta información?	Si	No

El proceso y objetivo de esta investigación me fue explicado por:_____

Yo acepto participar en esta investigación:

_____ _____ _____

Firma del participante Fecha Testigo

_____ _____

Nombre del participante Nombre del testigo

Entiendo que la persona que firme esta forma tiene el conocimiento del propósito de esta investigación y acepta participar voluntariamente.

_____ _____

Nombre y Firma del investigador Fecha

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